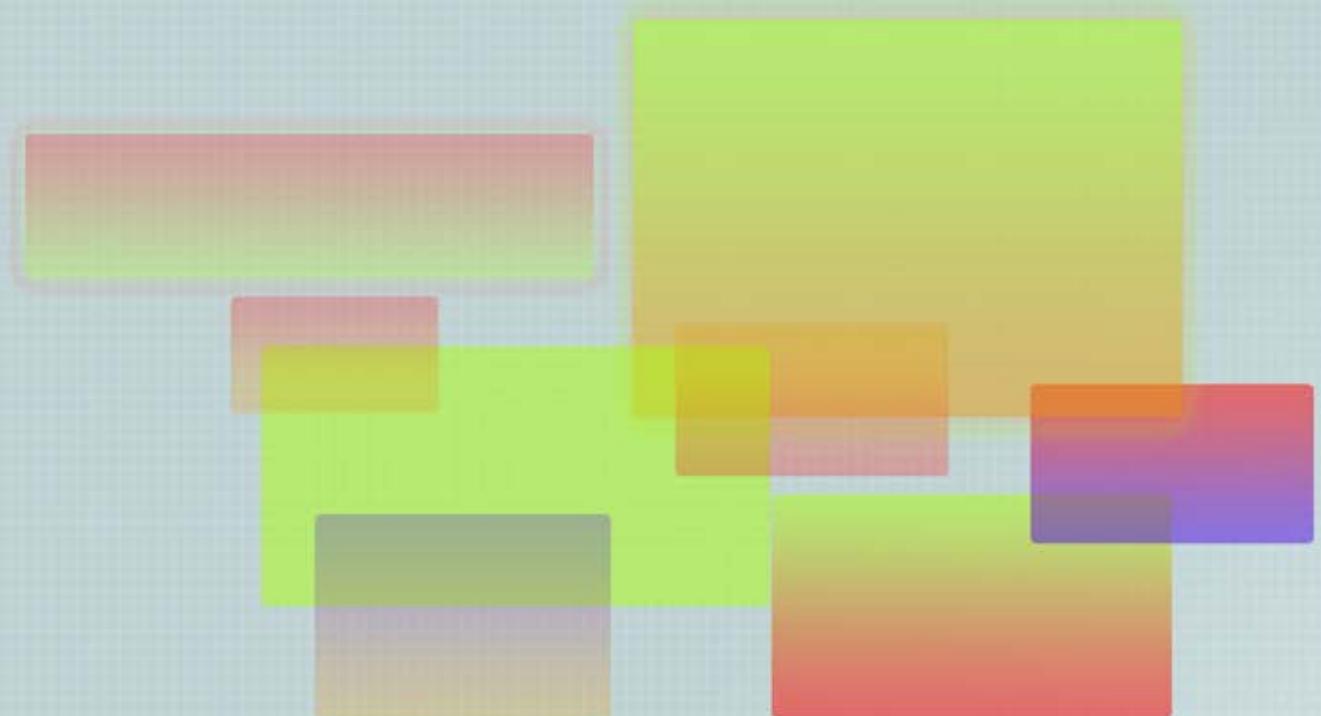


FORUM GUIDE TO

# School Courses for the Exchange of Data (SCED) Classification System





FORUM GUIDE TO

# School Courses for the Exchange of Data (SCED) Classification System



# National Cooperative Education Statistics System

The National Center for Education Statistics (NCES) established the National Cooperative Education Statistics System (Cooperative System) to assist in producing and maintaining comparable and uniform information and data on early childhood, elementary, and secondary education. These data are intended to be useful for policymaking at the federal, state, and local levels.

The National Forum on Education Statistics (the Forum) is an entity of the Cooperative System and, among its other activities, proposes principles of good practice to assist state and local education agencies in meeting this purpose. The Cooperative System and the Forum are supported in these endeavors by resources from NCES.

Publications of the Forum do not undergo the same formal review required for products of NCES. The information and opinions published here are those of the Forum and do not necessarily represent the policy or views of the National Center for Education Statistics or the U.S. Department of Education.

## 2014

This publication and other publications of the National Forum on Education Statistics may be found at the websites listed below.

The NCES Home Page address is <http://nces.ed.gov>

The NCES Publications and Products address is <http://nces.ed.gov/pubsearch>

The Forum Home Page address is <http://nces.ed.gov/forum>

This publication was prepared in part under Contract No. ED-CFO-10-A-0126/0002 with Quality Information Partners, Inc. Mention of trade names, commercial products, or organizations does not imply endorsement by the U.S. Government.

## Suggested Citation

National Forum on Education Statistics. (2014). *Forum Guide to School Courses for the Exchange of Data (SCED) Classification System*. (NFES 2014-802). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

## Technical Contact

Ghedam Bairu

(202) 502-7304

[ghedam.bairu@ed.gov](mailto:ghedam.bairu@ed.gov)

# Working Group Members

This guide was developed through the National Cooperative Education Statistics System and funded by the National Center for Education Statistics (NCES) of the U.S. Department of Education. The SCED Working Group of the National Forum on Education Statistics produced this document.

## Chair

### Kathy Gosa

Kansas State Department of Education

## Members

### Bruce Dacey

Formerly of the Delaware Department of Education

### Marilyn King

Bozeman School District #7 (MT)

### Rachel Kruse

Iowa Department of Education

### Zachary Mangold

Maryland State Department of Education

### John Metcalfe

Fremont County School District #1 (WY)

### Allen Miedema

Northshore School District (WA)

### Jan Rose Petro

Colorado Department of Education

### Susan Williams

Virginia Department of Education

## Consultants

### Kris Dunman

### Beth Young

Quality Information Partners, Inc. (QIP)

### Nicole Ifill

RTI International

## Project Officer

### Ghedam Bairu

National Center for Education Statistics (NCES)

## Acknowledgements

The National Forum on Education Statistics (the Forum) would like to thank everyone who reviewed or otherwise contributed to the development of the *Forum Guide to School Courses for the Exchange of Data (SCED) Classification System* and the SCED Version 2.0 Course Codes. This project benefited from the participation of many interested parties whose insights and perspectives helped shape the final document and the final Version 2.0 files. The following groups provided valuable course descriptions: State Education Agency Directors of Arts Education (SEADAE), the Association for Career and Technical Education (ACTE), the National Association of State Directors of Career and Technical Education Consortium (NASDCTEc), the U.S. Department of Education Office of Career, Technical, and Adult Education (OCTAE), the National Coalition for Family and Consumer Sciences Education (NCFACSE), the College Board, and the National Science Foundation (NSF).

# Foreword

## The National Cooperative Education Statistics System

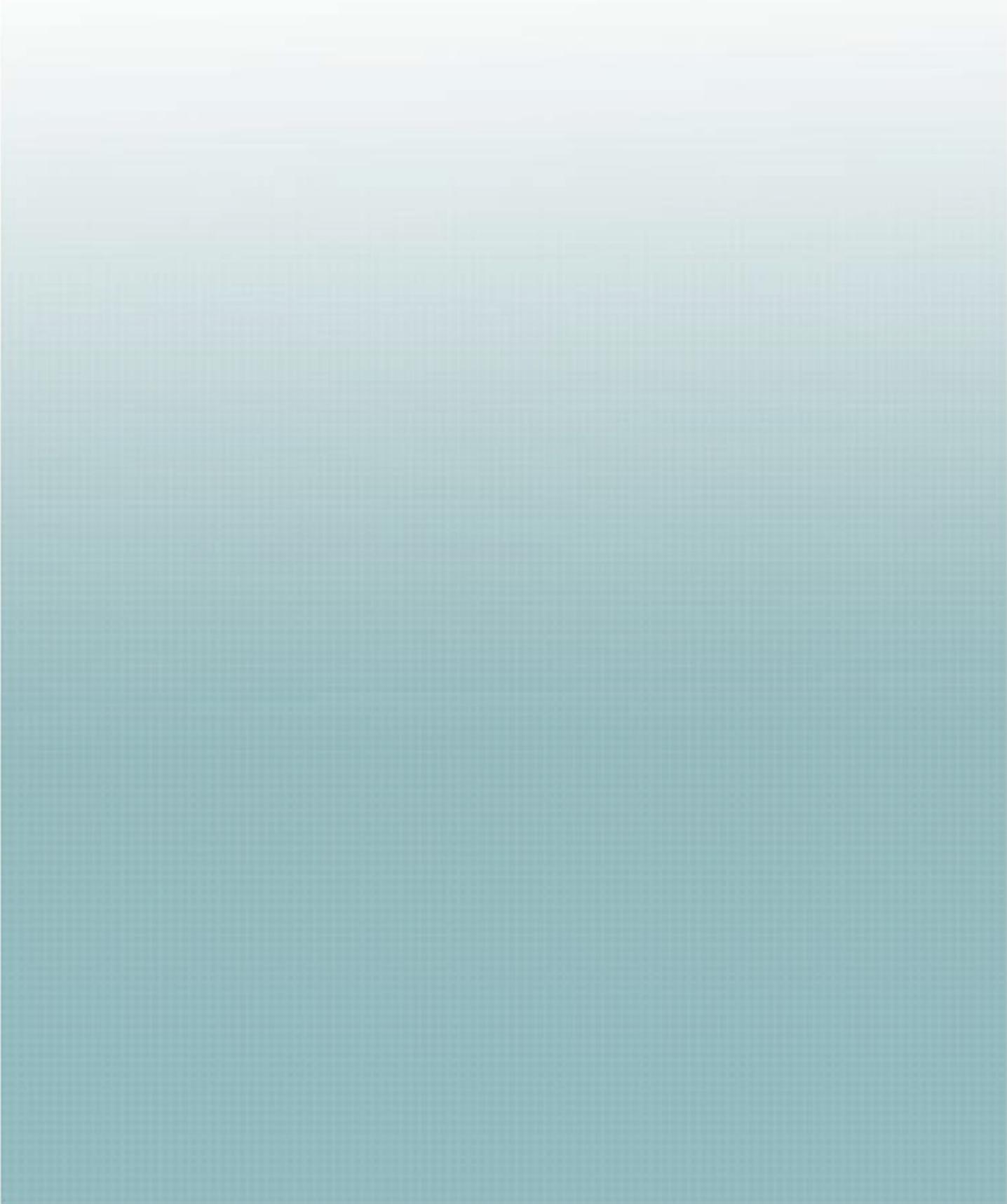
The work of the Forum is a key aspect of the National Cooperative Education Statistics System. The Cooperative System was established to produce and maintain, with the cooperation of the states, comparable and uniform education information and data that are useful for policymaking at the federal, state, and local levels. To assist in meeting this goal, the National Center for Education Statistics (NCES), within the U.S. Department of Education, established the Forum to improve the collection, reporting, and use of elementary and secondary education statistics. The Forum deals with issues in education data policy, sponsors innovations in data collection and reporting, and provides technical assistance to improve state and local data systems.

## Development of Forum Products

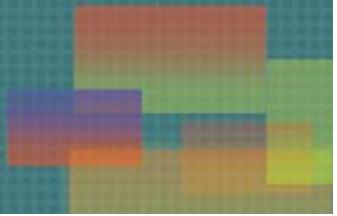
Members of the Forum establish working groups to develop best practice guides in data-related areas of interest to federal, state, and local education agencies. They are assisted in this work by NCES, but the content comes from the collective experience of working group members who review all products iteratively throughout the development process. After the working group completes the content and reviews a document a final time, publications are subject to examination by members of the Forum standing committee that sponsors the project. Finally, the entire Forum (approximately 120 members) reviews and formally votes to approve all documents prior to publication. NCES provides final review and approval prior to online publication.

# Contents

<b>National Cooperative Education Statistics System .....</b>	ii
<b>Working Group Members .....</b>	iii
<b>Foreword .....</b>	iv
National Cooperative Education Statistics System .....	iv
Development of Forum Products .....	iv
<b>Chapter 1. Introduction .....</b>	1
About this Guide .....	1
Importance of Standardized Course Codes .....	3
Benefits of SCED Implementation .....	3
SCED Development Process .....	5
<b>Chapter 2. SCED Structure .....</b>	9
Framework .....	9
Attributes .....	17
Additional Notes on the Content and Structure of SCED .....	19
How to Access Course Information .....	21
<b>Chapter 3. Best Practices - Implementation .....</b>	23
SCED Uses .....	23
SCED Implementation in State Education Agencies .....	25
SCED Implementation in Local Education Agencies .....	32
<b>Chapter 4. Innovative Uses of SCED .....</b>	35
Teacher-Student Data Link .....	35
Community College Courses .....	36
Core Courses for College Admission .....	36
<b>Appendix A - Frequently Asked SCED Questions .....</b>	39
<b>Appendix B - Course Subject Area Codes in SCED Version 2.0 .....</b>	41
<b>Appendix C - Changes Implemented in SCED Version 2.0 .....</b>	43
<b>Appendix D - Course Taxonomy Resources .....</b>	45
<b>Appendix E - Related Resources .....</b>	47



# Chapter 1: Introduction



## About this Guide

An individual student's educational experience often includes multiple transitions: progressing through K12 school levels, transitioning to postsecondary education or the workforce, and sometimes changing schools. It is important for both the student and the school systems that course information be easily understood and transferrable through each transition. Moreover, education stakeholders, including administrators, content-area organizations, postsecondary admissions officers, and researchers, are increasingly interested in comparing course offerings across schools. The School Courses for the Exchange of Data (SCED) Classification System was developed to meet the need for common, widely understood, standardized course codes that can be used to compare course information, maintain longitudinal data about students' coursework, and efficiently exchange course-taking records.

### SCED Version 2.0

This guide accompanies the release of SCED Version 2.0 Course Codes, but the best practices and information included in the guide are intended to also support future versions of SCED. Text boxes labeled **SCED Version 2.0** are used throughout the document to provide information specifically about updates in Version 2.0. Information in these text boxes is also included in Appendix C.

This guide was developed by the National Forum on Education Statistics (Forum) to accompany the release of SCED Version 2.0 Course Codes at <http://nces.ed.gov/forum/SCED.asp>. It includes an overview of the SCED structure and descriptions of the SCED Framework elements, recommended attributes, and information for new and existing users on best practices for implementing and expanding their use of SCED. Additional information including the option set, format, and CEDS ID of each element is included in the Common Education Data Standards (CEDS).

The content of this guide builds on previous work, including the 2007 document *Secondary School Course Classification System: School Codes for the Exchange of Data* and the 2011 expansion *Prior-to-Secondary Course Classification System: School Codes for the Exchange of Data*. Since the publication of those documents, SCED users have recommended updates to make SCED more robust and to ensure that it accurately reflects current course offerings. This guide is intended to address the needs of SCED users by providing

- a framework for coding secondary and prior-to-secondary courses;
- a change-management process that establishes a regular schedule for SCED reviews and updates;
- best practices for SCED implementation and use; and
- innovative uses of SCED.

## **SCED Version 2.0**

*Notable changes implemented in SCED Version 2.0 include*

- new and updated course codes, titles, and descriptions in Course Subject Area 5: Fine and Performing Arts, renamed to Visual and Performing Arts;
- new and updated course codes, titles, and descriptions for Career and Technical Education (CTE) courses in multiple Course Subject Areas;
- new and updated Advanced Placement (AP) courses in multiple Course Subject Areas;
- new course attributes that are not part of the SCED Framework, but can be used to provide expanded course information; and
- new Course Subject Area codes for prior-to-secondary courses that match secondary Course Subject Area codes.

The best practices and examples discussed in this document are intended to support future SCED versions.

SCED is a widely used standard in the K12 education data community because of its usefulness in facilitating the exchange of transcript information, establishing and maintaining longitudinal data systems, and providing a standard for course comparisons. It has also proved beneficial for organizations that use K12 course information for research, program monitoring, college admissions, and course comparisons.

The intended audience for this Forum Guide includes

- staff in state education agencies (SEAs) and local education agencies (LEAs) responsible for implementing and maintaining course codes, establishing data governance practices, tracking teacher schedules and qualifications, and data reporting;
- federal agencies such as NCES that review national course offerings and produce transcript studies, monitor programs, and determine federal funding allocations;
- content-area organizations that set professional standards for course offerings;
- organizations that conduct education research;
- colleges and universities that review transcripts for student admissions or to evaluate teacher preparation programs; and
- education software vendors that provide tools for education agencies to track and manage student course information.

### **What is SCED?**

The School Courses for Exchange of Data (SCED) is a voluntary, common classification system for prior-to-secondary and secondary school courses. It includes elements and attributes that identify basic course information.

### **SCED is Not**

- Required - adoption is voluntary
- All or nothing - not all SCED elements are needed for SCED to be useful
- A data collection - SCED does not collect data
- An implementation - SCED may be implemented differently according to the needs of various education agencies

## **Importance of Standardized Course Codes**

Student populations are increasingly mobile, and course-taking information systems must be capable of transferring data as students move from one program, institution, district, or state to another, or advance from one sector of the education system to the next sector or the workforce. SEAs and LEAs must be able to accurately record and track the achievements of students in local education systems in a manner that is easily understood, compared, and exchanged across systems, without compromising the content and structure of the local system. Without course code standards for communicating information, the transfer of data when a student moves to a new education setting may be slow, laborious, and fraught with errors, and can increase staff burden (e.g., time spent deciphering data) and potentially compromise student outcomes.

The use of standardized course codes within SEAs and LEAs can streamline data reporting processes and promote the collection of high-quality data. For example, when LEAs throughout a state accurately and consistently map their courses to SCED, LEA data stewards can quickly access data from multiple schools in a format preferred by the SEA. In turn, the SEA can easily and quickly process data submissions from multiple LEAs, compare courses in individual schools across the state, and compile data for federal reporting. A standardized system such as SCED establishes a coding structure that can be widely shared and easily understood, thereby reducing the need for multiple rounds of data translation and data checking.

Standardized course codes have a far-reaching impact on improving education systems. In addition to aiding the work of SEAs and LEAs, they provide a way for education agencies, researchers, policymakers, and other education stakeholders to compare course offerings and course-taking patterns across education organizations. Students, teachers, and others are better equipped to understand education data and make decisions when course information is easily understood and comparable, and when the systems that are built using standardized codes improve the maintenance and transfer of course information.

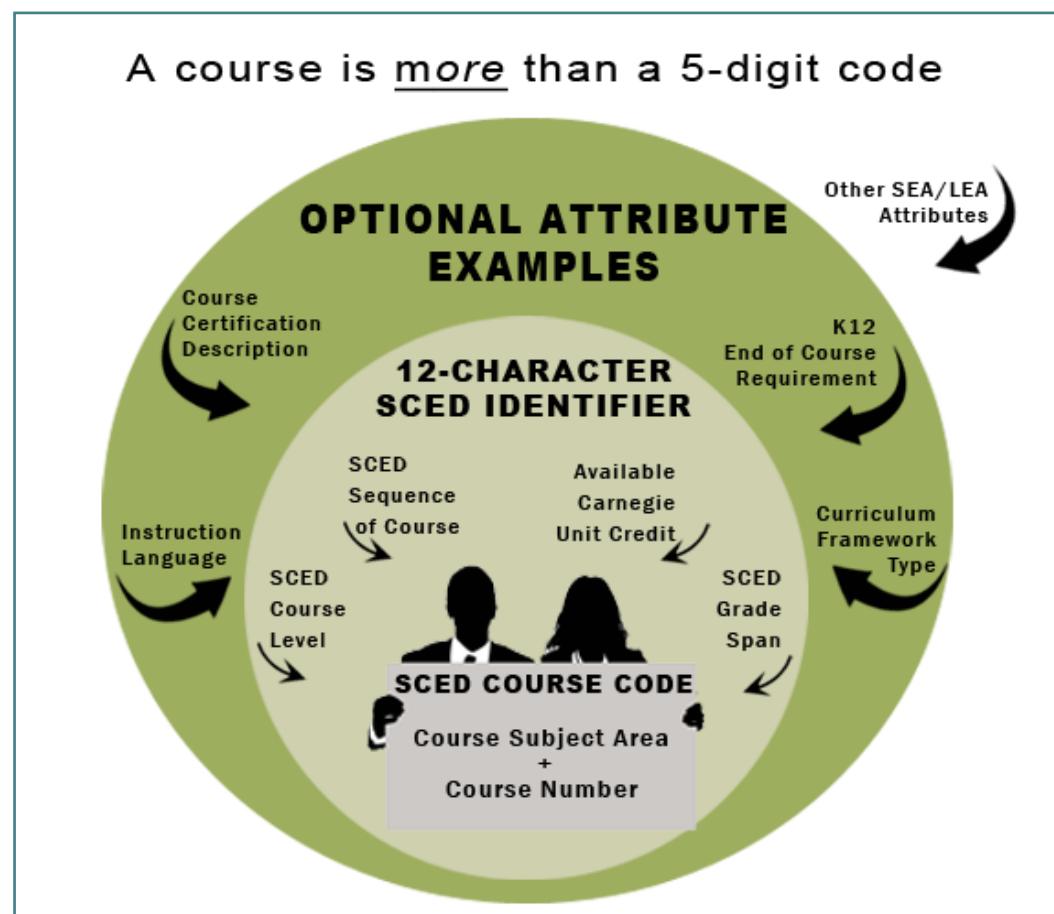
## **Benefits of SCED Implementation**

While the concept of a standard implies uniformity, SCED has been widely adopted because it offers a course-coding structure that can accommodate diverse course offerings and curricula. SCED was developed by a team of state and local education agency representatives who received assistance and feedback from a wide network of subject area experts in their SEAs and LEAs. As a result, the SCED structure was designed to be flexible enough to meet the needs of very different education agencies, and each SCED course description was designed to provide enough specificity to identify the course's topic and to distinguish it from other courses without defining every aspect of a course, such as course objectives, methods of delivery, prerequisites, or teacher certification requirements. SCED implementation varies according to the needs of SEAs and LEAs, with some agencies choosing to implement SCED as the standard for course codes and others choosing to map courses to SCED as one of several course code systems.

Like all Forum resources, SCED is available free of charge and SCED users may modify the resource to fit the needs of different education systems. SCED implementation can help SEAs and LEAs minimize the cost and staff time required to develop standardized course classification systems. Moreover, many SEAs have implemented SCED as part of statewide longitudinal data systems, and the accurate implementation of SCED ensures that an LEA's or SEA's course-coding data will be widely understood and that data will be comparable.

### A Course Is More than a Five-Digit Code

SCED is based on a five-digit Course Code that provides the minimum amount of information needed to identify a course within the SCED system. The 12-character SCED Identifier provides slightly more information, including the course level, the amount of Available Carnegie Unit Credit (or the span of grades for prior-to-secondary courses), and the placement of the course if it is part of a sequence. However, even the 12-character SCED Identifier provides only a basic framework for classifying and tracking courses. A comprehensive overview of a course includes much more information, ranging from the course description to the language of the course and the type of curriculum framework employed. Optional attributes can be added to the SCED Identifier to improve the usefulness of the standard. Attributes are elements widely used by SEAs and LEAs to provide more information on courses, but they are not essential to basic SCED classification.



## SCED Development Process

### SCED Working Group

The Forum convened a SCED Working Group in 2012 to review and update the 2007 and 2011 SCED resources and to address requests and comments that have been submitted to NCES. The Working Group developed a methodology for managing and implementing SCED changes. This methodology includes a set of Guiding Principles and a process for updating course codes and descriptions that involves working closely with subject matter experts and SCED users at the national, state, and local levels. Working Group members included representatives of SEAs and LEAs who were familiar with SCED implementation. After reviewing proposed updates to SCED, the Working Group determined the scope and timeline for Version 2.0 and began working with national content area groups to implement SCED Course Code revisions and updates. The Forum's national network of SEA and LEA members reviewed proposed Course Code updates and also provided information on SCED uses that contributed to the development of this guide.

### SCED Guiding Principles

SCED was developed using a set of Guiding Principles that outlined the overall goals and established a structure for courses included in the coding system. The Principles ensure that the diverse SCED Course Subject Areas, Course Codes, and descriptions all function as part of a cohesive standard.

#### *Guiding Principles: Classification*

- SCED is recommended as a common system that can be modified to meet the needs of SEAs and LEAs and, as such, does not describe every course offered in SEAs and LEAs.
- The frequency with which each course is offered and taken and the geographical span of each course (whether it is offered within one or multiple states) inform decisions about the number of course additions, but are not the final determinant of course inclusion. One benefit of an electronic data handbook is that with good search criteria, many entries can be included and sorted efficiently.
- SCED courses reflect current practices in each Course Subject Area and do not aim to lead the field.
- Each Course Subject Area includes courses commonly offered in the subject area along with four standard courses included in each Course Subject Area: Aide, Independent Study, Workplace Experience, and Other.

### SCED Version 2.0 Course Updates

- *Advanced Placement Course Codes* – based on course descriptions published by the College Board.
- *Visual and Performing Arts Course Codes* – informed by recommendations from the State Education Agency Directors of Arts Education (SEADAE).
- *Career and Technical Education (CTE) Course Codes* – informed by a coalition of experts led by members of the Association for Career and Technical Education (ACTE), the National Association of State Directors of Career and Technical Education Consortium (NASDCTEc), and the U.S. Department of Education Office of Career, Technical, and Adult Education (OCTAE). Family and Consumer Sciences (FCS) representatives, led by the National Coalition for Family and Consumer Sciences Education (NCFACSE), also contributed to CTE recommendations.
- *Exploring Computer Science and Computer Science Principles Course Codes* – based on course descriptions developed by the National Science Foundation.

### *Guiding Principles: System and Structure*

- Course descriptions focus on the course, not expectations for the students or their achievements.
- Course descriptions focus on content and avoid specifying delivery methods, location, credit application, or credentials needed to teach the course.
- Course titles and descriptions are not labeled as beginning or advanced because these divisions depend on local context.
- Sequence and rigor elements are included in the SCED Identifier.
- The SCED taxonomy maintains consistency across Course Subject Areas in terms of nomenclature, style, and detail of description.
- The SCED Framework does not label any courses as Career and Technical Education (CTE), but the CTE attribute identified in this document is suggested for use in identifying CTE courses.
- SCED course descriptions avoid references to other course descriptions.
- Course descriptions do not typically include sequential ordering or prerequisites, since these are often locally determined.
- No courses are added that describe material covered in existing courses.
- Course codes for archived courses are not deleted, but are instead labeled as archived and maintained for legacy information and to allow organizations to determine their own priorities and schedule for making changes.

Guiding Principles are not steadfast rules for SCED development, and exceptions to the Principles are included when necessary to meet the needs of SCED users and to accurately represent how courses are offered in SEAs and LEAs. For example, Foreign Language courses include exceptions to the Principle that course descriptions do not typically include sequential ordering because SCED users have indicated that Foreign Language courses are typically taught in the specified sequential order.

### **Future SCED Changes**

Course offerings and course descriptions evolve over time. SCED must reflect up-to-date course offerings to remain relevant, and updates must be implemented in a manner that maintains the structure and integrity of the established SCED standard. The process outlined below is meant to establish a regular schedule for reviewing suggested SCED changes.

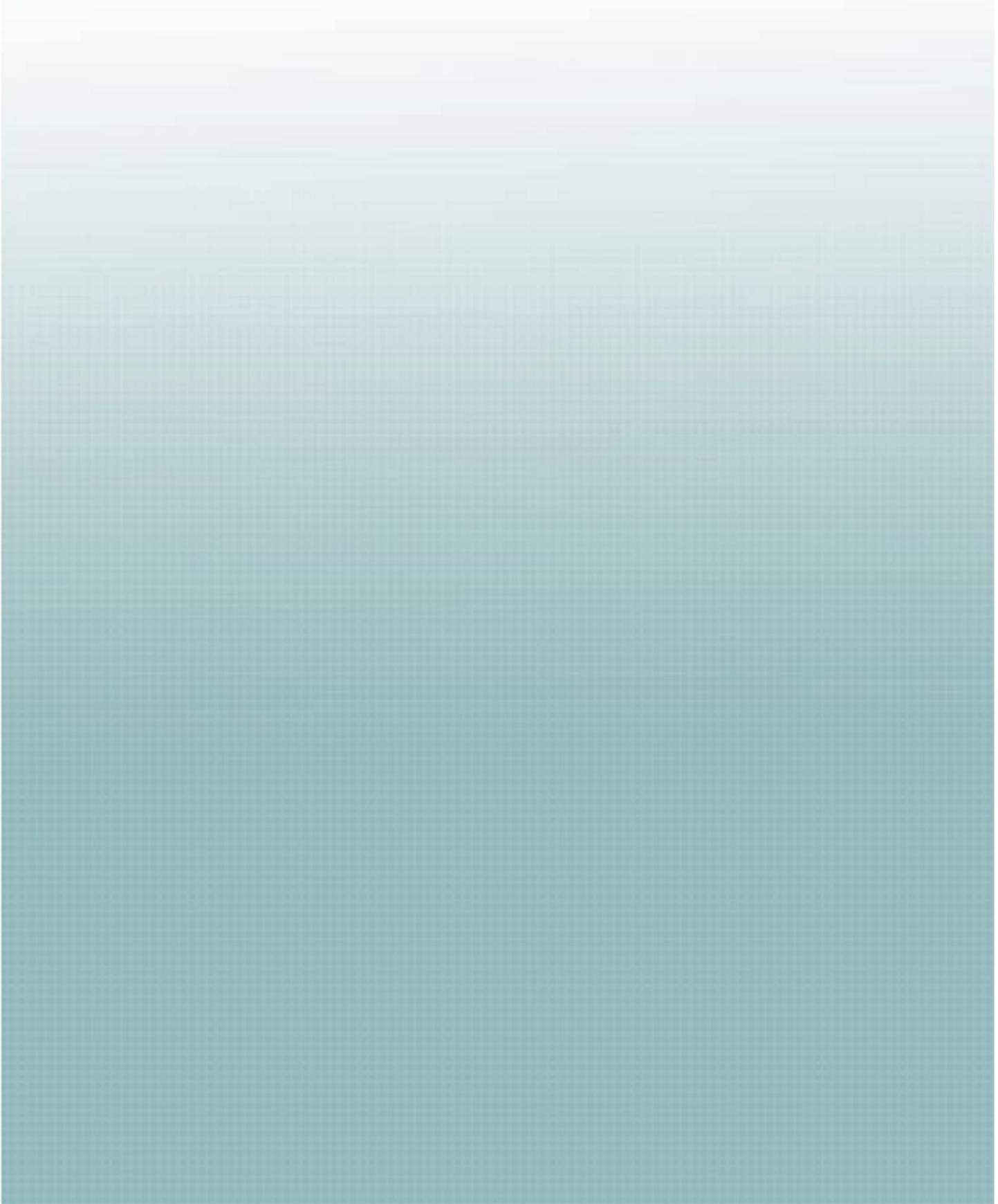
- *Recommendations:* SCED must be able to accommodate user suggestions for improvements and expansions in order to remain relevant. SCED users are encouraged to submit recommendations for improvement through the Forum website. Updates are based on the recommendations of a wide network of stakeholders, including national organizations, representatives of SEAs and LEAs, education researchers, practitioners, and other SCED users.
- *Review:* The Forum SCED Review Panel (functioning in the same manner as the SCED Working Group that led the SCED Version 2.0 update) will consider recommendations and suggestions submitted by SCED users and will determine

the scope of each update. After identifying a set of priorities, the Review Panel will contact subject matter experts in SEAs and LEAs to review and comment on proposed updates as applicable. The Review Panel may choose to expand the review process to include focus groups or feedback from national subject area content organizations.

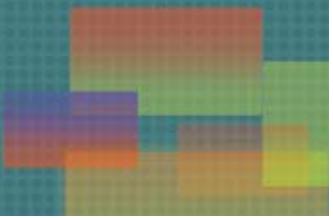
- *Publication:* Updated SCED Course Codes and attributes are reviewed by NCES and subsequently released on the Forum’s website. Each time SCED is updated and published it will include a new version number. Each SCED course will be labeled with a change status to indicate the type of change made. Courses that are no longer used are archived, but SCED Course Codes are not reused. Archived courses are labeled as archived but will remain available for use in legacy information and to allow organizations to determine their own priorities and schedule for making changes.

#### **SCED Review Panel Steps**

1. Review recommendations.
2. Determine the scope of the update.
3. Contact subject matter experts in SEAs and LEAs for comments on proposed changes, including archiving, adding, and updating courses.
4. Consult additional experts, as needed.
5. Compile feedback on all recommendations and determine final SCED updates.
6. Submit to NCES for review.
7. Publish the updated SCED version on the Forum website.



# Chapter 2: SCED Structure



## Framework

### The Language of SCED

SCED is structured into two parts: the SCED Framework and attributes. The term “SCED Framework” is synonymous with the SCED Identifier: a unique, 12-character code consisting of four basic elements. The four elements are SCED Course Code, SCED Course Level, Available Carnegie Unit Credit or SCED Grade Span, and SCED Sequence of Course. The five-digit Course Code is the essential core of the SCED Framework—it provides a basic structure for classifying course content. Other elements in the Framework—SCED Course Level, Available Carnegie Unit Credit or SCED Grade Span, and SCED Sequence of Course—provide basic descriptive information about the course.

Exhibit 1 illustrates how the Framework elements are used to identify specific courses at the secondary and prior-to-secondary levels.

<i>Secondary Course: United States Government — Comprehensive</i>				
SCED Course Code	SCED Course Level	Available Carnegie Unit Credit	SCED Sequence of Course	
04	H	1.00	1 1	
Social Sciences U.S. Government and History — Comprehensive Honors one Carnegie unit “1 of 1” — not part of a sequence				
<i>Prior-to-Secondary Course: United States Government — Comprehensive</i>				
SCED Course Code	SCED Course Level	SCED Grade Span	SCED Sequence of Course	
04	G	0607	1 2	
Social Sciences and History	U.S. Government — Comprehensive General	Grades 6 through 7	“1 of 2” — 1st part of a 2-course sequence	

Exhibit 1. SCED Identifier

## **SCED Version 2.0** **Course Subject Areas**

Beginning with SCED Version 2.0, secondary and prior-to-secondary courses use the same two-digit Course Subject Area codes. Previously, prior-to-secondary courses were indicated using a separate set of Course Subject Area codes.

Prior-to-secondary courses can be indicated using either the SCED Element Grade Span, which is part of the 12-character SCED Identifier, or the attribute Course Applicable Education Level, which can be added to the SCED Identifier to provide more information.

- *SCED Grade Span:* The grade span for which the course is appropriate.
- *Course Applicable Education Level:* The education level, grade level, or primary instructional level at which a course is intended to be taught.

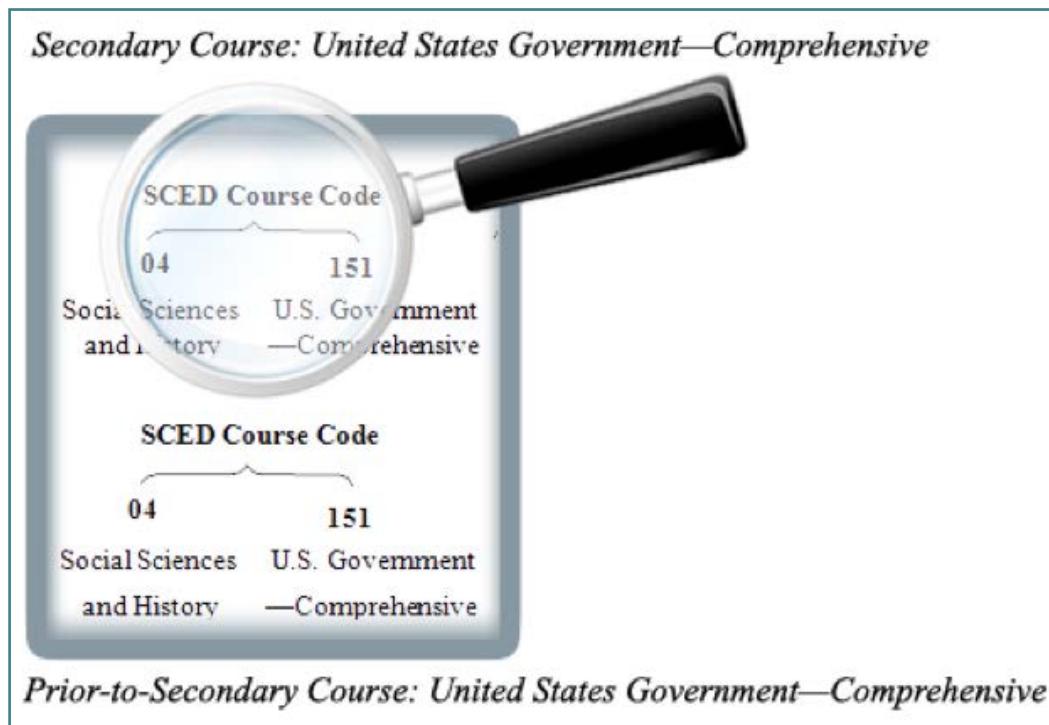
**Element 1. SCED Course Code** – the five-digit SCED code and name of the course. The first two digits of the code represent the Course Subject Area and the next three digits identify the Course Number. These identifiers are fairly general but provide enough specificity to identify the course's topic and to distinguish it from other courses in that Course Subject Area.

- *Course Subject Area* – the intended major subject category of the education course. Each Course Subject Area is represented by a two-digit code. The categories are intended to include the full spectrum of courses offered in schools. Course Subject Area codes are listed in Appendix B.
- *Course Number* – the three-digit number that distinguishes a course within a Course Subject Area. These numbers carry no meaning within themselves, with the exception of four Course Numbers reserved for courses included in each Course Subject Area:
  - ♦ 995—Course Subject Area—Aide
  - ♦ 997—Course Subject Area—Independent Study
  - ♦ 998—Course Subject Area—Workplace Experience
  - ♦ 999—Course Subject Area—Other

Only some numbers between 001 and 999 have been used in this system; unused numbers are reserved for two purposes:

- ♦ Unused numbers between 001 and 899 and 991 and 999 are reserved for use by the Forum SCED Review Panel to accommodate new courses in future versions of SCED.
- ♦ Unused numbers between 900 and 990 may be used by states to code courses that are not included in SCED.

Exhibit 1.a illustrates how the Course Subject Area and Course Number combine to form the Course Code.



**Exhibit 1.a. SCED Course Code**

*State Uses for Unused Course Numbers 900-990*

SCED is a course standard designed for widespread use, but even with frequent updates, it cannot include every course offered in every state. States often find that not all of their course content fits within the SCED structure. In such cases, when no existing SCED code will accommodate course content, states should assign an unused number between 900 and 990 to the course. States that incorporate unused Course Numbers between 900 and 990 must be sure that state-assigned Course Numbers are clearly identified and explained whenever course information is exchanged.

- *Courses that do not yet exist in SCED:* The SCED Guiding Principles indicate that SCED courses reflect current practices in each Course Subject Area, and do not aim to lead the field. States may therefore develop new courses that do not have SCED Course Numbers. In such cases, states are encouraged to temporarily assign unused Course Numbers between 900 and 990 to the courses. States may also recommend these courses to the SCED Review Panel for possible inclusion in future versions of SCED.
- *State-specific courses that do not exist in SCED:* While many of the courses taught in states should be submitted to the SCED Review Panel for future SCED consideration, other courses are state-specific and may not be appropriate for SCED. Many states have developed courses that cover topics such as state

history or employment preparation focused on the particular workforce needs of the state. SCED does not include state-specific courses, and it is therefore appropriate for states to assign unused Course Numbers between 900 and 990 to these courses.

**Element 2. SCED Course Level** – the course’s level of rigor. There are six options for coding this element:

- *B=Basic or remedial.* A course focusing primarily on skills development, including literacy in language, mathematics, and the physical and social sciences. These courses are typically less rigorous than standard courses and may be intended to prepare a student for a general course.
- *G=General or regular.* A course providing instruction in a given subject area that focuses primarily on general concepts appropriate for the grade level. General courses typically meet the state’s or district’s expectations of scope and difficulty for mastery of the content.
- *E=Enriched or advanced.* A course that augments the content and/or rigor of a general course, but does not carry an honors designation.
- *H=Honors.* An advanced-level course designed for students who have earned honors status according to educational requirements. These courses typically include additional content not found in general courses, and are formally designated as honors courses.
- *C=College.* A course that is designed to be credit-bearing at a postsecondary institution.
- *X=No specified level of rigor.* The notion of rigor may not be appropriate for some courses; survey or interest courses that expose students to a variety of subjects and study hall are examples.

The majority of courses that schools offer are general: intended for any student in the proper grade level range. However, some courses are distinguished by having more or less rigorous requirements than the general course and are designated as enriched/advanced, honors, or basic/remedial. Other secondary courses may confer credit at a postsecondary institution, and the level of rigor should be coded as college.

While individual schools, districts, and states may have criteria that clearly distinguish one level of course from another, these criteria are not the same in every state or school district. Moreover, not every SEA or LEA includes courses at each level. Any research or comparison of data using SCED Course Codes from different education agencies should acknowledge and account for variability in the implementation of this element.

Exhibit 1.b illustrates the addition of the element SCED Course Level.

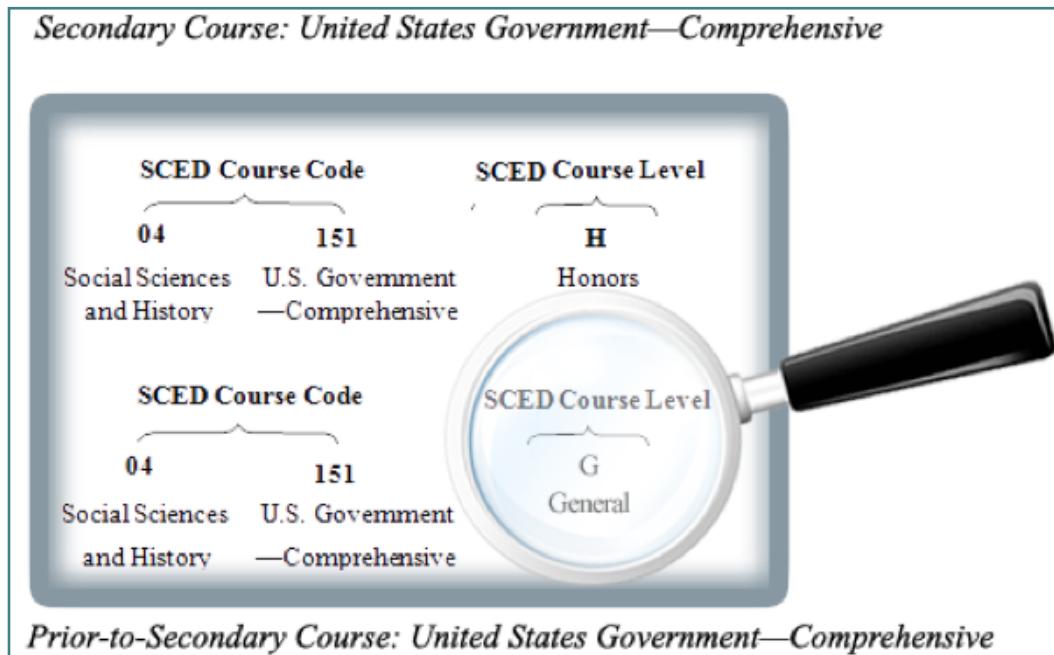


Exhibit 1.b. SCED Course Level

**Element 3. Available Carnegie Unit Credit or SCED Grade Span** – identifies either the amount of Carnegie Unit Credit available to a student who successfully meets the objectives of a secondary course or the intended grade span of a prior-to-secondary course.

- *Available Carnegie Unit Credit* – Measured in Carnegie Units, the amount of credit available to a student who successfully meets the objectives of the course. A course meeting every day for one period of the school day over the span of a school year offers one Carnegie Unit. A Carnegie Unit is thus a measure of “seat time” rather than a measure of attainment of the course objectives.

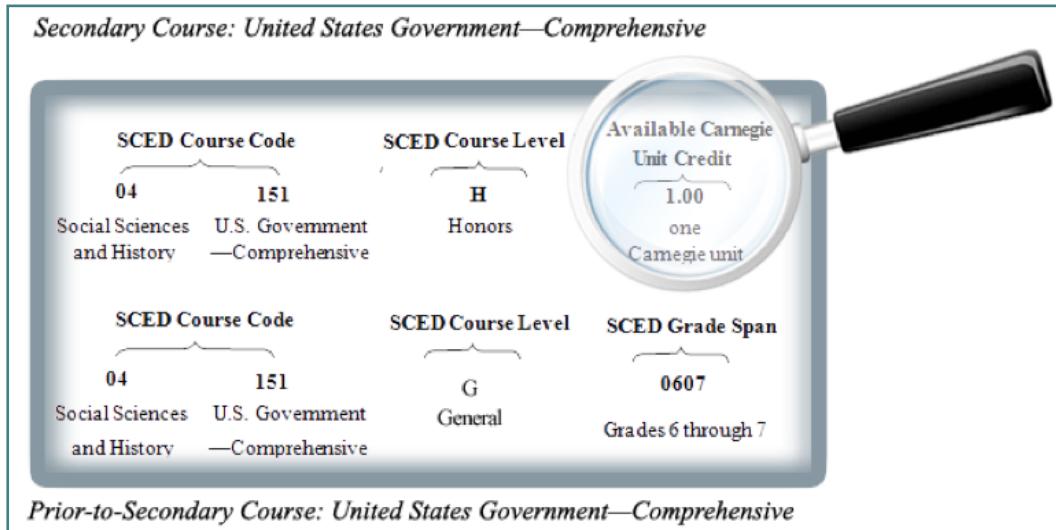
Available Carnegie Unit Credit is coded as a one-digit number carried out to two decimal places, with an explicit decimal. That is, one Carnegie Unit would be coded as 1.00. A half-unit of Carnegie credit would be reported as 0.50. Note that the Available Carnegie Unit Credit for a given course can vary from school district to school district. While some schools and districts use a performance- or competency-based metric of student progress, the Carnegie Unit remains the predominant metric of student progress in schools in the United States and is part of the SCED Framework.<sup>1</sup>

- *SCED Grade Span* – The grade span for which the course is appropriate.

<sup>1</sup> Additional information on the history of the Carnegie Unit is available from the Carnegie Foundation for the Advancement of Teaching, [www.carnegiefoundation.org](http://www.carnegiefoundation.org).

Carnegie Units hold no particular meaning for many prior-to-secondary courses, particularly in elementary and middle schools. The SCED Framework therefore includes the element SCED Grade Span for prior-to-secondary courses. SCED Grade Span is represented as a four-character code with no decimals. Each grade level from 1 through 12 is represented by a two-digit code, ranging from 01 to 12; kindergarten is represented by the letters KG, and prekindergarten by the letters PK. For example, a course appropriate for kindergarten and first grade would be assigned a grade span of KG01.

Exhibit 1.c illustrates the addition of the element Available Carnegie Unit Credit or SCED Grade Span.



**Exhibit 1.c. Available Carnegie Unit Credit or SCED Grade Span**

**Element 4. SCED Sequence of Course** – where a specific course lies when it is part of a consecutive sequence of courses. This element should be interpreted as “part ‘n’ of ‘m’ parts” (e.g., if a school offers 4 years of Theater, Theater 3 within this school would be indicated in the sequence elements as 34, denoting the third part of a 4-part sequence of courses).

The method for determining SCED Sequence of Course depends on the school system’s scheduling and grading policies, the number of local courses that map to one SCED code, and whether a course is part of a larger sequence of course requirements. SCED Sequence of Course indicates only the order in which a series of courses are taken and does not indicate the length of the course or the amount of credit available to a course taker. To accurately indicate the amount of credit available for each course within the sequence, SCED Sequence of Course must always be aligned with Available Carnegie Unit Credit.

Exhibit 1.d illustrates the addition of the element SCED Sequence of Course, which completes the 12-character SCED Identifier.

Secondary Course: United States Government—Comprehensive						
SCED Course Code		SCED Course Level		Available Carnegie Unit Credit		SCED Sequence of Course
04	151	H	Honors	1.00	one Carnegie unit	1 1 "1 of 1"—not part of a sequence
Social Sciences	U.S. Government and History	G	General	0607	Grades 6 through 7	SCED Sequence of Course 1 2 "1 of 2"—1st part of a 2-course sequence
Prior-to-Secondary Course: United States Government—Comprehensive						

Exhibit 1.d. SCED Sequence of Course

#### Examples of SCED Sequence of Course Implementation

Example 1: District A schedules courses by year and offers a full year each of Accounting I and Accounting II. Local Courses Accounting I and II correspond to SCED Course Code 12104 Accounting.

Local Course #	Local Course Title	SCED Course Code	SCED Course Level	Available Carnegie Unit Credit	SCED Sequence of Course	SCED Identifier
153	Accounting I	12104	G	1.00	12	12104G1.0012
154	Accounting II	12104	G	1.00	22	12104G1.0022

Example 2: District B schedules courses by semester and offers a full year each of Accounting I and Accounting II. Local Courses Accounting I and II correspond to SCED Course Code 12104 Accounting.

Local Course #	Local Course Title	SCED Course Code	SCED Course Level	Available Carnegie Unit Credit	SCED Sequence of Course	SCED Identifier
210F	Accounting I	12104	G	0.50	14	12104G0.5014
210S	Accounting I	12104	G	0.50	24	12104G0.5024
211F	Accounting II	12104	G	0.50	34	12104G0.5034
211S	Accounting II	12104	G	0.50	44	12104G0.5044

Example 3: District C offers three courses in Automotive Mechanics. Each course corresponds to SCED Course Code 20105 Particular Topics in Automotive Mechanics.

<b>Local Course #</b>	<b>Local Course Title</b>	<b>SCED Course Code</b>	<b>SCED Course Level</b>	<b>Available Carnegie Unit Credit</b>	<b>SCED Sequence of Course</b>	<b>SCED Identifier</b>
778	Auto Electricity	12105	G	0.50	13	12105G0.5013
779	Auto Suspensions/ Steering	12105	G	0.50	23	12105G0.5023
780	Auto Heating/ AC	12105	G	0.50	33	12105G0.5033

Example 4: District D has a studio arts requirement. Students must take a semester of Visual Art—Comprehensive and an additional semester of studio arts selected from a number of choices (drawing, ceramics, sculpture, painting, etc.). Corresponding SCED Course Codes include 05154 Visual Art—Comprehensive, 05156 Visual Arts—Drawing, 05159 Ceramics/Pottery, 05158 Visual Arts—Sculpture, and 05157 Visual Arts—Painting.

<b>Local Course #</b>	<b>Local Course Title</b>	<b>SCED Course Code</b>	<b>SCED Course Level</b>	<b>Available Carnegie Unit Credit</b>	<b>SCED Sequence of Course</b>	<b>SCED Identifier</b>
60	Visual Art—Comprehensive	05154	G	0.50	12	05154G0.5012
61	Drawing	05156	G	0.50	22	05156G0.5022
62	Ceramics	05159	G	0.50	22	05159G0.5022
63	Sculpture	05158	G	0.50	22	05158G0.5022
64	Painting	05157	G	0.50	22	05157G0.5022

### **Aligning Available Credit and Course Sequence – A Kansas Example**

When districts map their course data, it is important that they consider how their local student information system manages courses. When data stewards at the Kansas SEA analyzed data sent from districts, they were confused by the course outcome data from a number of districts. Students were being reported as completing several credits of the same course, often earning different grades for each completion. For example, a district that had listed Algebra I as a 1.0 credit course with sequence 1 of 1 sent 2 records for each of the freshmen. Analyzing the data as submitted resulted in each of the freshmen earning 2.0 credits of Algebra I during the year.

After discussing this with school and district staff, the state data steward realized that the school's student information system reported grades by semester, and so the school had submitted two grades for each of the freshman students, one for each semester of Algebra I. The data steward was able to solve the problem by recommending that the district map two courses to Algebra I, each with 0.50 Available Carnegie Unit Credits, and specifying sequences of 1 of 2 and 2 of 2, respectively. Then, when the district sends the students' course outcomes to the state, the outcomes will be recorded for the proper course with the proper credit.

## **Attributes**

Attributes are optional elements that can be applied to the 12-character SCED Identifier to provide a more robust description of courses. Attributes are not essential for implementing SCED, but they provide expanded information that schools and states may need for scheduling, funding, and reporting purposes. Because attributes are not part of the 12-character SCED Identifier, they may be implemented differently according to the needs of each LEA or SEA. The examples below include short descriptions of available attributes. Comprehensive information including definitions, option sets, and usage notes are available on the CEDS website.

### **SCED Suggested Attributes**

- **Course Title** provides a descriptive name for a course of study offered in a school or other institution or organization. In departmentalized classes at the elementary, secondary, and postsecondary levels (and for staff development activities), this refers to the name by which a course is identified (e.g., American History, English III). For elementary and other non-departmentalized classes, it refers to any portion of instruction for which a grade or report is assigned (e.g., reading, composition, spelling, language arts).
- **Course Description** provides a description of the course content and/or goals and may include reference to state or national content standards.
- **Additional Credit Type** is the type of credits or units of value available for the completion of a course in addition to Carnegie Units.
- **Course Grade Point Average Applicability** is an indicator of whether or not the course is included in the computation of the student's Grade Point Average (GPA).

- **Course Funding Program** is the program through which the course is funded. This may be a program targeted to a specific student population (e.g., Special Education, English as a Second Language) and the funding guidelines may specify that all or some of the students in the course are members of the subgroup.
- **High School Course Requirement** is an indication that this course credit is required for a high school diploma.
- **Instruction Language** is the language of instruction, other than English, used in the program or course.
- **Curriculum Framework Type** is an indication of the standard curriculum used for the course.
- **Course Aligned with Standards** is an indication of whether the course is aligned with the established standards of a curriculum framework.
- **Course Certification Description** is a description of a certification or recognition associated with the course (e.g., Networking, CAD, etc.)
- **K12 End of Course Requirement** is an indication that this course has an end-of-course examination required by the SEA or LEA.
- **Course Applicable Education Level** is the education level, grade level, or primary instructional level at which a course is intended.
- **Course Section Instructional Delivery Mode** is the primary setting or medium of delivery for the course.
- **National Collegiate Athletic Association Eligibility** is an indication that the course is approved for determining National Collegiate Athletic Association (NCAA) eligibility.
- **Career Cluster** defines the industry or occupational focus that may be associated with a career pathways program, plan of study, or course. The National Career Clusters® Framework is comprised of 16 Career Clusters®:
  - ♦ Agriculture, Food & Natural Resources
  - ♦ Architecture & Construction
  - ♦ Arts, A/V Technology & Communications
  - ♦ Business, Management & Administration
  - ♦ Education & Training
  - ♦ Finance
  - ♦ Government & Public Administration
  - ♦ Health Science
  - ♦ Hospitality & Tourism
  - ♦ Human Services
  - ♦ Information Technology
  - ♦ Law, Public Safety & Security
  - ♦ Manufacturing
  - ♦ Marketing, Sales & Service
  - ♦ Science, Technology, Engineering & Mathematics
  - ♦ Transportation, Distribution & Logistics

- **Family and Consumer Sciences Course Indicator** is an indication that the course is associated with the Family and Consumer Sciences plan of study.
- **Work-based Learning Opportunity Type** is the type of work-based learning opportunity in which a student participated.

#### **Key Considerations for Implementing and Using Attributes**

- Attributes are not required for SCED implementation. SEAs and LEAs may choose not to implement attributes, or they may choose to implement only those attributes that fit the needs of their course-coding systems.
- While the elements of the 12-character SCED Identifier must all be included in an established order, there is no standard order for attributes.
- The list of attributes includes elements that many SEAs and LEAs have added to the SCED Framework to create a longer code, but it does not include all of the attributes used in different systems. SEAs and LEAs may need to develop additional attributes to meet state and local needs.
- The addition of attributes requires additional documentation. SEAs and LEAs that include attributes as part of the course-coding structure should develop documentation similar to that provided for the 12-character SCED Identifier that explains the expanded coding structure.

Exhibit 2 is an example of how attributes could be added to the SCED Identifier to provide additional information about a course.

SCED Course Code	SCED Course Level	Available Carnegie Unit Credit	SCED Sequence of Course	Course Grade Point Average Applicability
02	121	0.50	1 2	Applicable
Mathematics	Calculus	College	one-half Carnegie unit	Applicable in GPA

**Exhibit 2. Example of SEA SCED Implementation**

#### **Additional Notes on the Content and Structure of SCED**

For SCED to be an effective means of collecting, managing, and transferring data, it is important that SCED users fully understand the taxonomy. The following notes clarify aspects of SCED and provide information on decisions made during the development of the 2007 SCED document, the 2011 prior-to-secondary SCED document, and the 2013 Version 2.0 update:

- *Additional Transcript Information:* The SCED Framework and attributes make it feasible to include detailed course information on electronic student transcripts, with standard course descriptions that are widely understood. However, there will undoubtedly be information about courses and student outcomes that SEAs and LEAs will need to add to an electronic transcript or other student record.

Information such as the student course outcome for a class may need to be added to transcripts to meet state and local needs.

- *Treatment of Special Education Courses:* There are no course descriptions in SCED that are intended solely for students with disabilities, or that indicate that a course has been modified for these students. When this information is appropriate, users will need to add an indicator in order to note that a course is adapted to meet the individual needs stated in a student's Individual Education Program (IEP). Additional information on criteria related to grading and diplomas for students with disabilities, including information on transcripts, can be found in the U.S. Department of Education Office for Civil Rights Letter to Runkel, updated in January 2010 and available online at [www5.esc13.net/thescoop/special/files/2012/02/21\\_OCR\\_Letters\\_Runkel.pdf](http://www5.esc13.net/thescoop/special/files/2012/02/21_OCR_Letters_Runkel.pdf).
- *Treatment of Advanced Placement (AP) and International Baccalaureate (IB) Courses:* AP and IB courses are assigned individual course codes in SCED, rather than being identified by the level element. This exception to SCED guidelines is necessary because the College Board and International Baccalaureate Organization define the content and set the performance standards for AP and IB courses. Unlike "honors" or "advanced" classifications, a course's designation as AP or IB is not at the discretion of the school, LEA, or SEA using SCED.
- *Treatment of Foreign Language Courses:* SCED does not include every language other than English that could be taught. The languages for which there are course descriptions are those most likely to be found in the elementary, middle, and secondary school course catalogs reviewed for SCED, or those specifically recommended for inclusion by subject matter experts and SCED users. Five course descriptions that progress from introductory to higher levels of fluency are provided for each language included in SCED, as well as separate descriptions for courses intended for native speakers, field experience, the study of conversation and culture, the study of the language's literature, IB level A examinations, and IB level B examinations.
- *Miscellaneous Course Subject Area:* Courses that cannot be assigned to any of the other Course Subject Areas are designated as courses with a miscellaneous Course Subject Area. Miscellaneous courses often include activities or skills that are applicable to a range of topics, such as Standardized Test Preparation (22001) or Study Hall (22006).
- *Career and Technical Education Courses:* SCED does not differentiate between courses that are considered purely academic and those considered career/technical. Courses commonly considered part of career and technical education (CTE) are included in multiple SCED Course Subject Areas. Many SEAs and LEAs track courses according to the National Career Clusters® Framework, and the CTE attribute identifies courses according to Career Clusters® to facilitate this tracking.

- *Family and Consumer Sciences Courses:* Many family and consumer sciences (FCS) education courses are included in Course Subject Area 22: Miscellaneous, but FCS courses may also be found in other Course Subject Areas, including
  - ♦ Course Subject Area 8: Physical, Health, and Safety Education;
  - ♦ Course Subject Area 16: Hospitality and Tourism; and
  - ♦ Course Subject Area 19: Human Services.

The FCS attribute identifies courses throughout SCED that are part of FCS education.

## How to Access Course Information

The SCED Course Codes are available in a downloadable spreadsheet on the Forum website. The downloadable spreadsheet file includes a list of every five-digit SCED Course Code along with the course title, course description, and change status for each Course Code.

### Course Groupings

- **SCED Career and Technical Education (CTE) Courses** – SCED Course Codes recognized as belonging to one of the 16 CTE Career Clusters®<sup>2</sup> are included in the comprehensive list of SCED Course Codes as well as a separate tab of the SCED report. Individual SCED Course Codes may be used in multiple Career Clusters®, and the list includes both the SCED Course Code and CTE Attribute for each course to indicate the specific course—Career Cluster associations.
- **SCED Family and Consumer Sciences (FCS) Education Courses** – SCED Course Codes that the National Coalition for Family and Consumer Sciences Education has recognized as part of FCS education are included in the comprehensive list of SCED Course Codes as well as a separate tab of the SCED report. The list of SCED FCS Education Courses includes the SCED Course Code and FCS Attribute for each course.

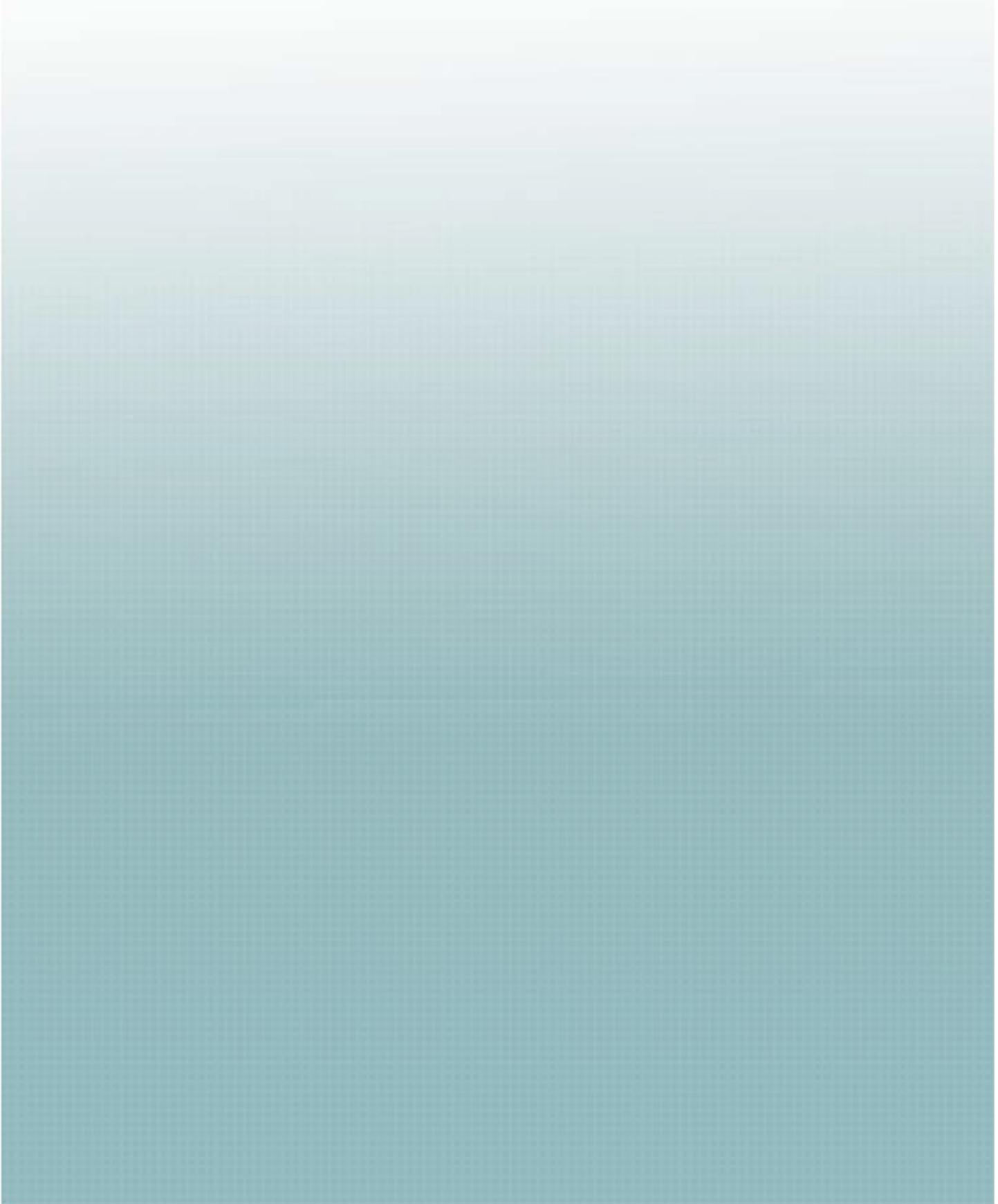
SCED users are encouraged to customize SCED to meet the needs of their education agencies. The basic 12-character SCED Identifier can be combined with attributes or other elements to create electronic student transcripts, course scheduling and curriculum systems, teacher-student data links, systems for matching teacher qualifications and assignments, data to support research and reporting, and a host of other information needs and data management tools.

### SCED Version 2.0 Change Codes

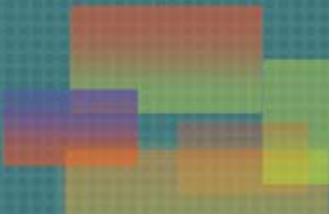
The SCED Version 2.0 downloadable spreadsheet includes six possible change status options for each SCED Course Code:

- No change
- Substantive update
- Editorial update
- New course
- New course merged from prior-to-secondary
- Archived course

<sup>2</sup> Additional information on Career Clusters® is available at [www.careertech.org/career-clusters](http://www.careertech.org/career-clusters).



# Chapter 3: Best Practices - Implementation



## SCED Uses

SCED was intended to make it easier for LEAs and SEAs to maintain longitudinal student records electronically and to facilitate the transmission of course-taking information between education organizations. A secondary benefit was the production of standardized course information for those who evaluate transcripts for postsecondary admission or research purposes. As education agencies, research organizations, federal agencies, content organizations, and others increasingly implement SCED as a standard, the potential uses for SCED increase. The list below includes common SCED uses and describes how each use can improve the work of education agencies and organizations that rely on course codes for research and reporting.

### Facilitating Student Record Exchanges

When students transfer between schools, the students' course histories must be transferred with them. The receiving school must evaluate a student's transcript to determine if the courses listed are the same as, or acceptably similar to, courses offered in the new school. The effort required to compare and evaluate courses multiplies when numerous students transfer to a single school. SCED provides common course descriptions that enable school staff to easily compare courses when reviewing transcripts of transferred students and to more accurately determine course similarities or differences.

### Developing Statewide Longitudinal Data Systems

Considerable variation in course standards and coding systems can exist among LEAs within a state, and even between schools within an LEA. SCED assists states developing statewide longitudinal data systems because it allows states to maintain and compare data from diverse systems without compromising the integrity of locally developed course descriptions or coding systems.

### Standardizing Reporting

Individual schools, LEAs, and SEAs must often report course enrollment and outcome data to other organizations, including local, state, and federal agencies. These organizations may use these data to determine funding and resource allocations or to monitor accountability for specific programs. The use of standardized codes allows schools to collect information once for multiple reports. Without a standardized system, it can be burdensome to collect and interpret student course-taking information from different schools or LEAs.

### **Promoting System Interoperability**

“Interoperability” in data management systems means that information can be transferred from one system to others with minimal effort. In a school district, for example, interoperable software applications ensure that when the name and address of a new student are entered into the system, the information also appears in the district’s library, class assignment, transportation, food service, student information management, and other relevant systems. SCED provides a standard course-coding framework for vendors of school information systems that are working toward interoperability. During the development of the 2007 SCED publication, the Student Information System Workgroup of the Schools Interoperability Framework Association provided recommendations and insight into SCED development. As SCED implementation increases, the course-coding structure and definitions can be included in student information systems or used to form a crosswalk from one system to another.

### **Facilitating Research**

Research using standardized course codes has widespread applications, including identifying trends in course taking and students’ access to educational experiences, examining links between practice and desired outcomes, and analyzing differences among subsets of students. Moreover, SEAs are conducting research using course data in longitudinal student data systems to measure the added value of education and program participation for students as they progress through education levels and from one education system to the next. Information about the courses students take and their performance in those courses is vital to understanding the effects of education, but it is almost impossible to measure without a standard system for describing courses. SCED provides capability for that effort and can greatly reduce the time it takes to review course information.

Standardized course codes provide researchers with a common language to understand course codes used by different education systems. Researchers who “speak” the language of SCED do not need extensive training to use data from LEAs and SEAs that have implemented SCED. The use of SCED Course Codes facilitates SEA and LEA partnerships with researchers by reducing the burden on both researchers and school system staff of deciphering different course code systems and establishing common terminology.

The SCED Working Group anticipates that the addition of attributes will further promote research using SCED Course Codes by facilitating new methods of classifying courses. For example, the attribute “Course Section Instructional Delivery Mode” includes the option “Online,” which can be used to identify and compare courses fitting this description within an education system or among education systems. Similarly, the addition of attributes to track courses according to Career Clusters® can facilitate research that focuses on the courses in each cluster.

## **Implementing Standardized Transcripts**

Many education organizations are using electronic exchanges of transcripts (e-transcripts) to improve the security and efficiency of transcript information transfers. SCED provides a structure for exchanging course data via e-transcripts that can be expanded and altered to meet the needs of different information systems. The five-digit SCED Course Code transfers basic information that can be used to identify courses and compare course content. The 12-character SCED Identifier provides additional commonly used transcript information in a structured manner that allows a closer comparison of courses. Attributes can be included, as needed, to convey additional transcript information, or the school or district can add other elements that convey locally required information.

The benefits of standardized transcripts and e-transcripts extend beyond the K12 sector. Postsecondary institutions need information about students and their coursework, typically to determine students' eligibility for enrollment, financial assistance, and eventual placement. Standardized transcripts provide this information in a format that is easy to understand and allows for the comparison of transcripts from many SEAs and LEAs.

## **Managing Teacher Assignments**

Effective school leaders design, develop, and implement school schedules that optimize organizational capacity and increase learning opportunities for all students. In larger school systems, SCED Course Codes may be utilized for assigning faculty to courses that best suit their teaching qualifications and credentials. Each course is assigned a SCED Course Code, and faculty members are assigned a list of SCED Course Codes that correspond to courses that they are certified and highly qualified to teach. A program that aligns courses with the appropriately qualified and certified instructors can help determine the best fit for instructors.

## **SCED Implementation in State Education Agencies**

SCED Working Group members reviewed SCED use among SEAs and identified three best practices for SCED implementation: promoting SEA-LEA collaboration, establishing data governance, and preparing for ongoing maintenance.



### **SEA-LEA Collaboration**

SCED implementation often requires coordination among LEAs, SEAs, and individual schools to align different course-coding systems and develop a common understanding of how SCED elements and attributes should be used. Promoting SEA-LEA collaboration through strategies such as combined SEA-LEA taskforces or coding workshops allows SEAs and LEAs to work together to identify and resolve issues. Moreover, ongoing LEA involvement in SCED implementation decisions helps to ensure that a state's use of SCED accurately reflects local practices.



### Data Governance

Data governance is the system of policies and procedures that defines the roles and responsibilities for all aspects of data collection, management, and use in an education agency, as well as the processes in place for developing new policies and procedures. When applied to SCED, data governance refers to how an education organization establishes oversight for SCED implementation, use, and maintenance, including procedures for managing SCED changes at both SEA and LEA levels. Establishing data governance gives SCED users confidence that their SCED use is aligned with the overall system of SCED use within the SEA.



### Ongoing Maintenance

SEAs and LEAs retire old courses, add new courses, and modify existing courses to keep course offerings up-to-date and to meet the changing needs of schools and students. The Forum also develops new versions of SCED to ensure that SCED is up-to-date and accurate.

Ongoing maintenance refers to the changes SEAs and LEAs must make over time to improve their use of SCED, including aligning newly developed local courses with SCED Course Codes, implementing new versions of SCED, or adopting SCED attributes. SEAs that prepare for ongoing maintenance as part of SCED implementation help to prevent SCED from becoming outdated and provide SCED users with established procedures for adding courses to SCED.

The examples below were provided by SEA members of the Forum SCED Working Group to illustrate the ways in which different states have implemented SCED to meet the specific needs of their education systems. Each SCED example highlights a particular state's approach to SCED implementation, including one or more of these best practices.

#### Iowa Department of Education

Iowa's first implementation of course codes occurred in the fall of 1997 for the 1997–1998 Iowa Basic Educational Data Survey. The Iowa Department of Education used course codes released in *A Pilot Standard National Course Classification System for Secondary Education (SNCCS)*, which was published by NCES in 1995 to promote the use of a standard vocabulary and to encourage the maintenance of accurate and complete data about students. SNCCS was replaced with the development of SCED in 2007. Iowa districts used the SNCCS for 11 years and then switched to SCED for the 2008–2009 school year.



*SEA-LEA Collaboration:* To help districts make the change, the Iowa Department of Education hosted several regional SCED coding workshops throughout the state during the spring of 2008. The Iowa Department of Education provided an electronic spreadsheet to each district that contained their previously submitted courses, a crosswalk between the old NCES code and the new SCED code, and an electronic version of the 2007 *Secondary School Course Classification System: School Codes for the Exchange of Data (SCED)*. Districts were asked to bring appropriate personnel and materials to the workshop to begin the coding process.

The Iowa Department of Education gave a presentation to introduce the new SCED code structure, advantages of the changes, and potential stumbling blocks found in the new codes, but the majority of the time was allocated for districts to code their courses. Many district staff had not been involved in the implementation of SNCCS codes 11 years earlier, and the transition to SCED provided them with an opportunity to re-examine coding practices and ensure proper alignment between course content and SCED code selection. Through a cooperative agreement with the state-certified student information system vendors, districts were then able to import into their student information system the completed spreadsheet containing local course numbers and SCED Course Codes to populate the newly created SCED Course Code field.

### **Delaware Department of Education**

The Delaware Department of Education's Technology Department developed a proposal to implement SCED in 2007. Delaware already had a statewide public accounting system, and assigning state course codes made sense as part of a larger effort to develop a statewide longitudinal data system. Delaware received funding for the proposal in 2010 through the Race to the Top (RTT) Fund. The proposal outlined a process for creating statewide course codes and allotted two years for the implementation. The proposed process included

- Hiring a part-time employee who was familiar with school building scheduling and curriculum. The position was funded through the longitudinal data systems section of the RTT grant and was responsible for working with a consultant from the public accounting system and a Delaware Department of Education project manager to analyze and code state course equivalents; providing training to district staff; and managing the progress of statewide SCED code implementation.
- Funding development of an e-transcript system in Delaware's Student Data Exchange (SDE), the system used in Delaware to send transcripts to colleges and universities and import grades for transfer students. The SDE program was developed to incorporate the SCED Course Codes so that the program could be used nationally.
- Analyzing the SCED handbook and initial coding with one school district to establish a process for working with additional districts and developing training resources for district staff. The proposal included plans for expanding training to include the entire state in December 2010.

The implementation process began as intended—training occurred in December 2010 and limited coding began. Initial coding focused on core academic courses at the secondary level. These courses were coded only with the five-digit SCED Course Codes since much of the other information included in the SCED Identifier already existed in the Delaware Department of Education course catalog. Several unforeseen changes affected Delaware's SCED implementation. Staff turnover in the middle of the project caused a delay in implementation, and it was necessary to devote one staff person to the project full time. It was also necessary to manually upload the new course codes into the student information system. The Department of Education began the project with the intention of

using modified Classification of Instructional Programs (CIP) codes as state course codes for career and technical education courses, with the goal of reducing the workload and completing the project faster. However, it became apparent over time that the use of the modified CIP codes would not work and all codes were converted to SCED. The project expanded over the course of implementation to include prior-to-secondary SCED and, eventually, to include the entire 12-character SCED Identifier.



*Data Governance:* Once initial implementation was complete, the Delaware Department of Education's SCED team developed a list of procedures that will guide future SCED reviews and provide quality control for SCED use:

- Look for new courses and code them as needed.
- Work with school districts and charters to review current coding and adjust as needed.
- Work with the Department of Education assessment team to identify end of course exams and cross reference students tested with course coding.
- Work with the Department of Education career and technical education department to map CIP course coding with SCED Course Codes.
- Work with the team responsible for the Department of Education's web-based information dashboard to verify that courses are coded correctly.
- Copy SCED course codes to the master schedule each week.
- Develop a communications and outreach plan to provide LEAs, charter schools, and Department of Education staff with information on SCED and the benefits of SCED implementation.

### **Virginia Department of Education**

SCED was first used in Virginia as a means for school divisions to report courses on the Master Schedule Collection (MSC). The MSC was developed to comply with state fiscal indicators and it also absorbed a few other existing reports. SCED is also used in Virginia to facilitate the federal Civil Rights Data Collection, and the state is planning for future statewide data collections using SCED Course Codes.

SCED implementation began in Virginia with a comparison of SCED Course Codes and existing state course codes. The Virginia Department of Education's Offices of Instruction, Teacher Licensure, and Education Information Management spent several months matching the existing state course codes with SCED Course Codes. The Office of Instruction reviewed each SCED Course Code and corresponding Course Subject Area and aligned the descriptions to what best fit the description of the Virginia courses. They also reviewed old state codes and deleted those that were outdated or redundant, a task that had not been done for many years.

Virginia codes and SCED Course Codes were initially matched in a spreadsheet. Upon completion of the crosswalk, there were several Virginia courses that aligned to the same SCED Course Codes. Early in the process, Virginia recognized that once the courses were

entered into a normalized database, there would be no way to distinguish two different Virginia courses that used the same SCED Course Code. To solve the problem, the Virginia Department of Education added an attribute to the SCED Framework called the “Virginia Sequence.” This element allowed for further customization of the SCED Course Code. For example, both English 9 and Pre-IB English 9 were aligned to SCED code 01001. As a result, English 9 was given a Virginia Sequence of “1” and Pre-IB English 9 was given a Virginia Sequence of “2.”

The element “Virginia Sequence” is also useful for coding career and technical education courses because it allows the content to be divided into state-defined segments. For example, the Carpentry curriculum was divided into three parts using a Virginia Sequence of 1, 2, and 3. The SCED sequence can still be used by the institution teaching the course to determine if Carpentry 2 is divided into smaller sections (part 1 of 4, for example).

Once the Virginia Sequence was added to the SCED Course Codes, the spreadsheet of Virginia course codes and SCED Course Codes was reviewed by the program offices at the Virginia Department of Education and released to the public for district review. Districts responded with comments on the crosswalk, and each comment was considered and vetted for accuracy. In many cases the options from the districts were implemented into the final crosswalk.

The Office of Education Information Management aligned SCED Course Codes with the appropriate endorsements for teacher licensure purposes, and the Office of Teacher Licensure reviewed the alignment.

SCED Course Codes were officially used by Virginia in the inaugural MSC in the summer of 2010. Divisions were given a choice of converting to SCED Course Codes or continuing with Virginia course codes for the first years of the data collection. Though time constraints and student information system issues led some divisions to choose to keep the Virginia codes for a year, many divisions chose to implement SCED immediately. With the introduction of the Civil Rights Data Collection that required use of SCED, most divisions are using SCED Course Codes to report their classes in the MSC. Virginia is also capitalizing on the value of the SCED Course Codes and the validity of the comprehensive MSC data by using MSC data in the state’s career and technical education funding model.



*Ongoing Maintenance:* After the initial SCED-to-Virginia code crosswalk was completed, the Office of Teacher Licensure developed a process to change and update codes. No new Virginia codes are being added when new classes are created because Virginia codes will be phased out in the next few years. As a result, the SEA or LEA staff member requesting a new code must pick a SCED Course Code and send it to the Office of Educational Information Management. The Office of Educational Information Management enters the new SCED code and corresponding information into the system. In addition, the SCED Course Code is added to the public spreadsheet that school divisions use to identify their courses for reporting purposes. The request is then sent to the Office of Teacher Licensure to enter endorsement information.

## **Colorado Department of Education**

The Colorado Department of Education (CDE) requested that LEAs map their course codes to SCED in the 2012–2013 school year in order to prepare for the implementation of teacher-student data link reporting in 2013–2014. The implementation of standard course codes was critical for establishing a reliable link between teacher and student data.

Colorado's Statewide Standard Course Code System provides a course code catalog based on SCED that allows LEAs to map their course codes to the state standard course codes based on content and share data on local courses. In order to ensure successful implementation, Colorado set a series of deadlines to prepare LEAs for 2013–2014 teacher-student data link reporting. By November 1, 2012, all LEAs were to assign an individual responsible for mapping local courses; by February 1, 2013, all LEAs were asked to complete mapping and upload their middle and high school courses; and by May 1, 2013, they were to do the same for preschool and elementary school courses.



*Ongoing Maintenance:* Colorado has processes in place for LEAs to request the addition of new codes to the statewide system. A cross-departmental team reviews the requests and determines whether new codes are warranted.

One of the benefits of the statewide system is that districts have been able to align courses internally, thereby discovering extremely similar courses with different codes. Additionally, the system allows LEAs to view course catalogs of other LEAs, which aids in transcript analysis to determine which courses incoming students have taken and the credit they earned.

## **Kansas State Department of Education**

The Kansas State Department of Education (KSDE) received a federal grant in 2007 that included funds to establish and implement standard state course codes. The subsequent process required considerable time and effort, but SEA staff found that standardized course codes have played a significant role in Kansas in fostering communication among state programs and establishing systemic improvements to data quality.



*SEA/LEA Collaboration:* KSDE began the implementation of standardized course codes by establishing a task force that served as a cross-section of the state. Task force members included representatives from large and small districts and from a variety of stakeholder groups including special education, career and technical education, postsecondary, principals, counselors, and curriculum leaders who met frequently to advise KSDE staff on establishing the Kansas Course Codes.

The first step for the task force was to decide whether or not SCED would be the basis of the Kansas high school course codes. The task force unanimously decided to adopt SCED rather than creating a new set of course codes for Kansas. The task force took the additional step of establishing state course codes for elementary and middle school, since SCED had not yet been expanded to include prior-to-secondary course codes. Kansas included

additional indicators in the course schema such as targeted programs, grade level, college and career readiness, and qualified admissions.

Communication efforts during the Kansas initiative included monthly conference calls with local student information system vendors, a collection of frequently asked questions that was posted online, and frequent presentations at statewide meetings and regional education conferences to provide information and updates to LEAs. Involving stakeholders through these communication efforts allowed the task force to gather critical insights and to raise awareness for future implementation plans. The task force was so helpful to the process that KSDE recommends keeping a task force in place through the second and third years of any state course code initiative.

KSDE originally intended to license a vendor tool to assist LEAs in mapping their local course codes to the state course codes, as well as SCED. Significant delays in obtaining the tool from the vendor threatened the success of the initiative, and KSDE decided instead to develop the tool internally. The resulting efforts produced the Kansas Course Code Management System (KCCMS), which was developed and implemented in less than 4 months. KCCMS allows LEAs to enter or upload course data—including credits, sequence, and the LEA's local course identification number from their local student information systems—and then to map each of their local courses to the state course codes. Kansas Course Codes are now required when LEAs report any course-level data to the state, including staff assignments and program area courses such as special education, career and technical education, migrant, and English language learners. LEAs are also required to use their mapped Kansas Course Codes to report student-level course outcomes.

Since the initial SCED mapping work was a significant undertaking, LEAs could choose to use KCCMS to map their own local courses to the state courses or have KSDE perform the mapping for them. LEAs that choose to map their own courses in KCCMS were given a stipend. KSDE required superintendents of LEAs that chose to have the state perform the mapping for them to sign an agreement stating they understood they were responsible for reviewing and maintaining the course mapping. Despite the agreements, some districts failed to review their course mapping for accuracy, which resulted in challenges that could have been avoided with proper reviews prior to implementation.

The importance of reviewing course mapping was one of several lessons learned in the KCCMS implementation process. Many LEAs also learned that the standardized course codes are generalizations and it is not always possible to find a state course that matches their local course description exactly. KSDE learned that too much flexibility in implementation can undermine the usefulness of the standard. KSDE initially chose to allow flexibility with how courses and credits were mapped. However, as the uses of the data evolved over time and KSDE became aware of the variety of local practices, the level of flexibility was reduced and edit checks were implemented to ensure compliance with business rules. KSDE has also provided guidance to LEAs regarding how course data are being used across data systems to ensure that course codes are implemented and maintained in a standard format.



*Data Governance:* As Kansas Course Code implementation proceeded and use began across multiple state programs, it was apparent that KSDE needed to establish a governance process for any changes made to the codes or to the process and rules for managing them. Recognizing that changes to the system impact multiple data collections and the use of the data by multiple program areas, KDSE's Data Governance Board (DGB) assumed management of Kansas Course Code changes.

To ensure oversight and management across program areas over time, a committee of KSDE content area specialists proposes course code additions or changes to KSDE's DGB. The committee provides written details regarding the proposed additions or changes, and appears before the DGB in person to respond to any questions or concerns. The DGB pays particular attention to cross-program implications to protect the sensitive alignment of course, educator, and student data systems that are now in place. Other areas of DGB focus are consistency, potential impact on LEAs, and use of the data over time.

As NCES moves to a process allowing greater responsiveness to program area requests for SCED Course Code additions and changes at the national level, KSDE's governance process will provide a structured method for timely adoption of needed changes while minimizing the risk or negative impact of changes on LEA and SEA management and use of the data.

## **SCED Implementation in Local Education Agencies**

LEAs that implement SCED may do so independently or as part of statewide initiatives to standardize courses. The examples below were provided by LEA members of the Forum SCED Working Group to illustrate how districts have implemented SCED to meet the specific needs of their education systems. Each SCED example highlights a particular LEA's approach to SCED implementation, including one or more of the best practices for SCED implementation: promoting SEA-LEA collaboration, establishing data governance, and preparing for ongoing maintenance.

### **Bozeman Public Schools, Montana**

The Montana Office of Public Instruction (OPI) recognized the need for a standardized course-coding system while building the statewide longitudinal data system for prekindergarten through age 20 (P-20) education. OPI chose to adapt and adopt SCED to enable statewide reporting on school programs and course offerings, and to provide a foundation for the future development of electronic student transcripts.

OPI prepared for the implementation of SCED Course Codes by developing a mapping tool for districts to map local course codes to the statewide OPI Course Codes. LEAs were assured that the OPI Course Codes were not intended to replace local course codes, course names, course content descriptions, or section identifications. However, LEAs were required to compare the content for each local course to course descriptions in the OPI Course Code list, find the best match, and record the OPI Course Code in the local student information system. LEAs were not required to use the OPI Course Code Mapping Tool, but the optional tool was designed to reduce the burden of mapping by allowing LEAs to

save their work and make revisions as needed. Implementation was completed in the fall of 2013, when schools and LEAs were required to submit course information using the OPI Course Codes and then link courses to the teachers assigned to each course.

Bozeman School District 7 adopted the OPI Course Codes as part of the statewide implementation, and it also developed processes to update course codes so that they accurately reflect local course offerings and course content.



*Data Governance:* A small committee of Bozeman School District 7 staff, including the high school principal, IT data steward, and deputy superintendent, assign SCED Course Codes to local courses based on the local course description.

New course proposals in Bozeman School District 7 go through an extensive vetting process. After approval by the committee, courses must be reviewed by the superintendent, who recommends courses to the Board of Trustees for final approval. Upon approval, the committee matches the new course to a SCED Course Code. The process includes several different branches of the LEA system so that the decisions of any one branch are subject to review by other branches, and all changes are implemented in a standardized manner across the LEA.

### **Northshore School District, Washington State**

Approximately 10 years ago, Northshore School District began the process of migrating from a student information system that the district had used for more than a decade to one that would support standardized course codes. The previous system was not standardized, and course codes and descriptions varied widely throughout the district. Over time each school had added courses and modified courses extensively, resulting in course catalogs at the three comprehensive high schools that were similar but included fundamental differences that made comparisons across schools difficult. Northshore determined that the best way to solve the problem of divergent course codes was to utilize Washington State Course Codes as part of the new system implementation.

The first step to resolving this issue was to expand support for the project beyond technology and data management staff. It was important that staff throughout the LEA understood the benefits of standardized course codes for the project to be a success. Fortunately, Northshore's director of Secondary Instruction and Curriculum had firsthand experience with the problems associated with having three different course catalogs and was eager to take on the project.

To kick off this effort, the district brought together a representative group of secondary counselors along with staff from technology and data management to start the task of reconciling the three course catalogs into one document. The work involved much discussion about what should and should not be part of a district-wide curriculum. The group considered questions such as whether two courses were different enough to warrant separate course codes and whether a course could have an alternative diploma category. The group also found a very significant side benefit of the reconciliation work was that it encouraged discussions of what should be taught in courses in Northshore.



*Ongoing Maintenance:* The discussions among counselors and staff proved to be so valuable that the counselors' group continues to meet on a monthly basis with district staff years after the course catalog work was completed and the student information system was implemented. The group was able to guide Northshore through the transition to SCED Course Codes when the state of Washington aligned its State Course Codes with SCED. While many of Northshore's peer districts reported that they struggled to make the transition to SCED implementation, Northshore had already done the hard work of building single course codes and descriptions that aligned with state course codes. As a result, Northshore was able to easily align course codes with SCED.

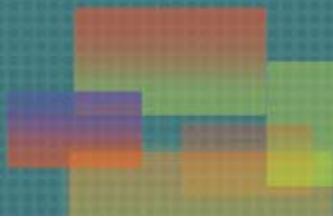
### **Fremont County School District #1, Wyoming**

Fremont County School District #1 in Wyoming implemented SCED prior to full statewide adoption because the local system of course codes was inadequate for the district's data management and reporting needs. District staff, led by the data steward, recognized the need for course code updates and agreed to implement SCED and provide feedback to the state to inform the statewide implementation. After successfully implementing SCED, School District #1 maintained many of the procedures established during implementation to guide future changes to SCED.



*Ongoing Maintenance:* School District #1 has a district data steward who manages the LEA-wide student information system. The data steward is responsible for entering all approved courses into the system and assigning the appropriate SCED Course Code. New and revised courses are approved by January so that they can be entered into the student information system by February of the same year. The data steward uses the Forum SCED publications to determine the appropriate SCED Course Code for each course, and the assistant superintendent reviews the codes. After codes have been approved by the Board of Education, school counselors and principals undertake the task of matching local courses to SCED Course Codes and entering the SCED Course Codes into the student information system. The student information system was built to accommodate multiple course codes, so School District #1 is able to enter a local code along with the SCED Course Code, and the SCED Course Code becomes an attribute of the course.

# Chapter 4: Innovative Uses of SCED



States with a history of SCED use are increasingly finding new and innovative ways that it can serve the needs of their education systems. SCED provides a standard, structured method for communicating course information, and it can be easily incorporated into or linked with other systems as states explore new ways to collect, link, and analyze data. In many states, SCED has become a common language for communicating course information. Innovative uses include incorporating SCED into teacher-student data links, using SCED to code community college courses, and developing college admission processes that identify a set of core SCED Course Codes.

## Teacher-Student Data Link

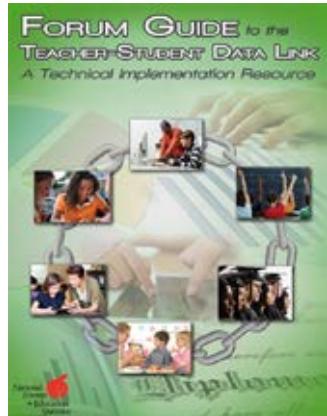
The teacher-student data link (TSDL) formally identifies the relationship between teacher and student data in education systems, and it is most often based on a student's enrollment in a course section and a teacher's assignment to that same course section. One of the elements necessary for establishing the link is a state or local course identifier. SEAs and LEAs often choose to use the 12-character SCED Identifier as the course code identifier because it is easily mapped to other systems and use of the SCED Identifier allows for TSDL comparability across different education agencies.

Kansas and Colorado are examples of states that used the implementation of SCED as a starting point for developing TSDLs. Kansas Course Codes, which are based on SCED, were the key to establishing the TSDL in Kansas. Once courses were mapped to the Kansas Course Codes, teachers were assigned to those courses in the educator data collection system. Those assignments laid the foundation for validating the teacher-student link in the student data collection system, as well as establishing a valid, reliable teacher-course-student link. Because LEAs most often maintain their educator assignment data in a human resources system, separate from the student information system where student-course data are maintained, one of the greatest challenges for LEAs was not in mapping their courses, but rather in the alignment necessary to ensure accurate course, educator, and student reporting across multiple systems. By linking educators and students using course codes, course data quality concerns that might otherwise have gone unnoticed were identified in both course and educator reporting by LEAs.

The Colorado Department of Education (CDE) implemented SCED Course Codes as the basis for the Colorado Statewide Standard Course Code System. CDE plans to collect

student-level course information through the TSDL, including courses completed and grades earned. The collection will enable CDE to strengthen cross-LEA data exchanges, including transcript exchanges.

### The Teacher-Student Data Link



*The Forum Guide to the Teacher Student Data Link: A Technical Implementation Resource* provides a practical guide for implementing a TSDL that supports a range of uses at the local, regional, and state levels. The guide addresses the considerations for linking teacher and student data from multiple perspectives, including governance, policies, data components, business rules, system requirements, and practices. It provides references to promising practices for high-quality data linkages, including TSDL specific processes such as roster verification and the establishment of the Teacher of Record.

## Community College Courses

Iowa has 15 community colleges that all use a common course numbering system for their local course numbers. If two community colleges offer a similar course with at least an 80 percent match in content, the courses will have the same local number at both community colleges. Because of this common course numbering system, the Iowa Department of Education is able to assign a SCED Course Code to all community college courses with some degree of confidence that a course at one institution is similar to a course with the same Course Title and SCED Course Code at another community college. A spreadsheet is available on the Iowa Department of Education's website to help districts develop the SCED Course Code for their dual-enrollment community college courses. The list is updated annually as new courses become available to Iowa high school students.<sup>3</sup>

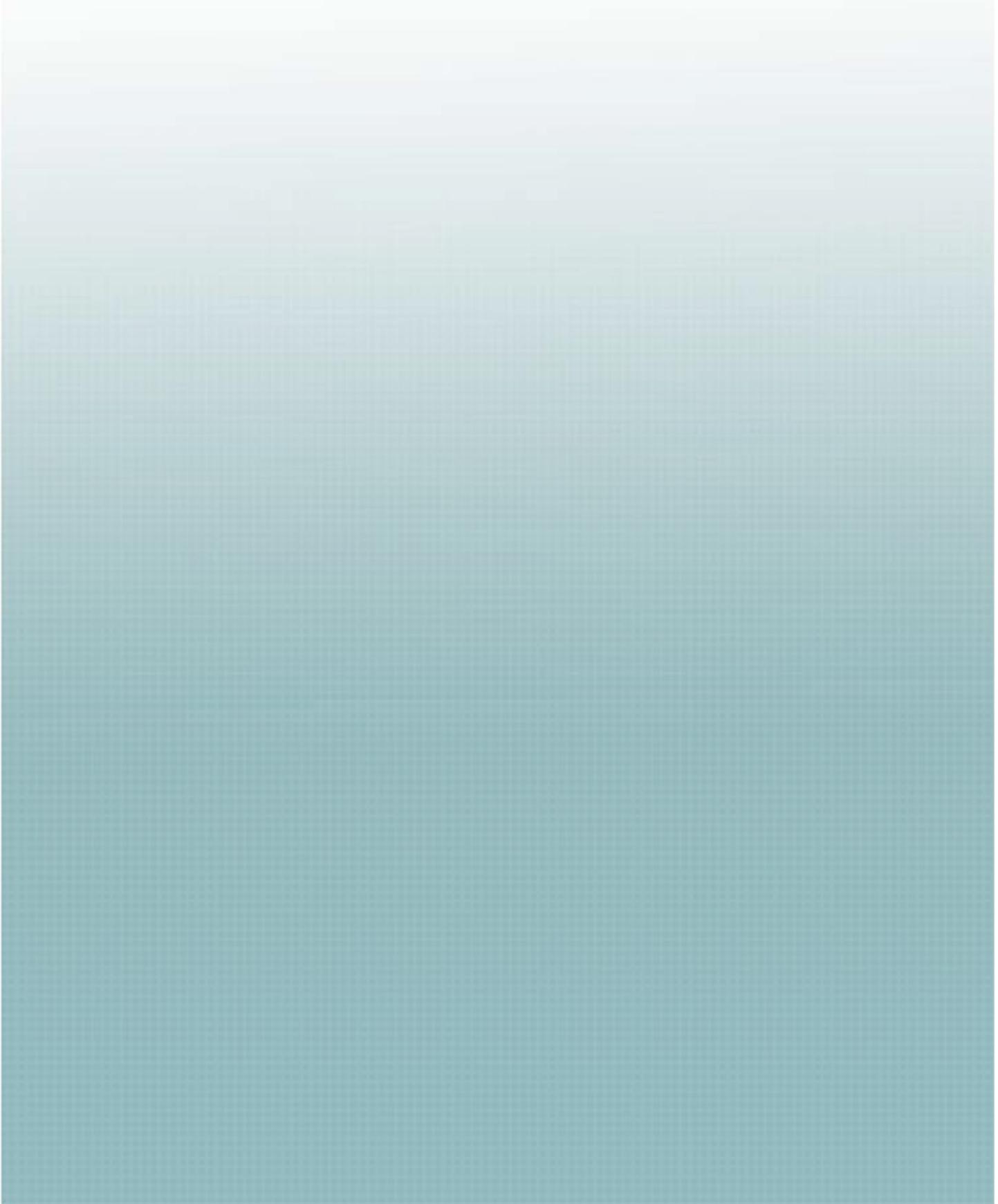
## Core Courses for College Admission

Since the fall of 2009, the three Iowa regent universities have instituted the Regent Admission Index (RAI). An Iowa student applying to one of the three regent institutions gains automatic admission with a minimum score on this index. Part of the index is based on successful completion of core courses completed in high school, which are identified by SCED Course Codes. As high school students develop course schedules throughout their high school experience, they will know which courses count toward their RAI score. The list of acceptable courses can be found at [www.regents.iowa.gov/RAI/info.html#courses](http://www.regents.iowa.gov/RAI/info.html#courses).

Automatic admissions are facilitated by the Iowa Transcript Center, which is available to any Iowa public or non-public K12 school that has the state-approved transcript extract

<sup>3</sup> Additional information on Iowa's use of SCED for community college courses is available at <https://www.educateiowa.gov/data-reporting/student-reporting-iowa-formerly-easier>.

capability and has successfully transmitted electronic course data to the state for state reporting. All courses listed on a student's electronic student record or transcript include the district-assigned SCED Course Codes. The Iowa regent universities receive transcripts electronically and can process an Iowa high school 12th grader's transcript quickly, thus notifying a prospective student of preliminary acceptance within 48 hours.



## Appendix A. Frequently Asked SCED Questions

*Q: Is the use of SCED mandatory?*

A: No. SCED is a voluntary course-coding system, intended as a resource for SEAs and LEAs.

*Q: I would like to pilot SCED in my SEA or LEA using codes from only one Course Subject Area. Can I choose to implement parts of SCED, or must I implement the entire SCED system at once?*

A: SCED is not all-or-nothing. Not all parts of SCED must be implemented for SCED to be useful.

*Q: The SEA is implementing SCED but my LEA has a very useful local coding system. Do we have to start from scratch to implement SCED?*

A: Depending on the SEA's requirements, you may not need to start from scratch. Rather, consider mapping your existing local codes to SCED.

*Q: Several SCED Course Codes that my SEA (or LEA) uses have been archived in the most recent version of SCED. How do I code those courses?*

A: Archived SCED Course Codes are still available for use. SCED Course Codes are archived when a course is no longer commonly taught, or when the content of the course is better represented in a new course. Course descriptions for archived courses include recommendations for new codes that may meet your needs.

*Q: How do I code Special Education Courses?*

A: The treatment of Special Education Courses is discussed in Chapter 2. There are no course descriptions in SCED that are intended solely for students with disabilities, or that indicate that a course has been modified for these students. When this information is appropriate, users will need to add an indicator in order to note that a course is adapted to meet the individual needs stated in a student's Individual Education Plan (IEP).

*Q: Schools in my state (or district) are increasingly offering courses that integrate content from multiple Course Subject Areas, such as courses that combine math and science, or history and composition. How can I accurately code these courses using SCED?*

A: It may be necessary to map course content for integrated courses to multiple SCED Course Codes. Each education agency must determine how best to assign credit for the portions of the course assigned to each SCED Course Code. Some education agencies attribute partial credit to each mapped course. Others assign credit for one Course Subject Area only.

*Q: My SEA (or LEA) has schools that deliver instruction in multi-grade classrooms. Teachers in these classrooms teach multiple grades of students at the same time, but still meet the grade-level expectations for each student enrolled. How should I code these courses?*

A: From a SCED perspective, teachers in multi-grade classrooms may be teaching multiple courses simultaneously or they may be teaching a single course that is targeted to multiple grades.

- If different courses are taught within the classroom, each course should be given a separate SCED Course Code (e.g., one group is studying 02052 Algebra I and another group is studying 02072 Geometry).
- If a single course targets multiple grade levels (e.g., 9th, 10th, and 11th graders are all enrolled in 04001 World Geography) then the course can be coded using the attribute "Course Applicable Education Level." Courses that do not offer Carnegie Unit Credits may be coded using the element "SCED Grade Span."

**Q:** *My SEA offers a number of courses that are only relevant to students in our state. How can I code these courses in SCED?*

**A:** SCED includes several methods for coding state-specific courses and other courses that do not correspond with an existing SCED Course Code. State-specific courses may be coded as part of an established SCED Course Subject Area or they may be coded as Course Subject Area 22—Miscellaneous. Unused Course Numbers in the range 900-990 are available for coding courses that do not exist in SCED, or the course can be coded as Course Number 999-Other. Additional information on coding state-specific courses is included in Chapter 2 of this document.

**Q:** *I have already mapped my state's (or district's) courses to SCED. Am I expected to update our codes every time the Forum releases a new version of SCED?*

**A:** No. New SCED versions are intended to provide up-to-date and accurate course codes so that SCED remains relevant and useful to SEAs and LEAs. If the current version of SCED meets the needs of your SEA or LEA, you may not need to update. However, some states require LEAs to update codes in accordance with state codes.

**Q:** *My SEA (or LEA) implemented prior-to-secondary course codes using the 2011 SCED Guide, which includes Course Subject Areas 51-73. Do I need to re-code all prior-to-secondary courses using the new codes for Course Subject Areas?*

**A:** All SCED updates, including changes to prior-to-secondary Course Subject Areas, are intended to ensure that SCED remains relevant and useful to SEAs and LEAs. If the existing prior-to-secondary Course Subject Areas meet the needs of your SEA or LEA, you may not need to update. However, some states require LEAs to update codes in accordance with state codes.

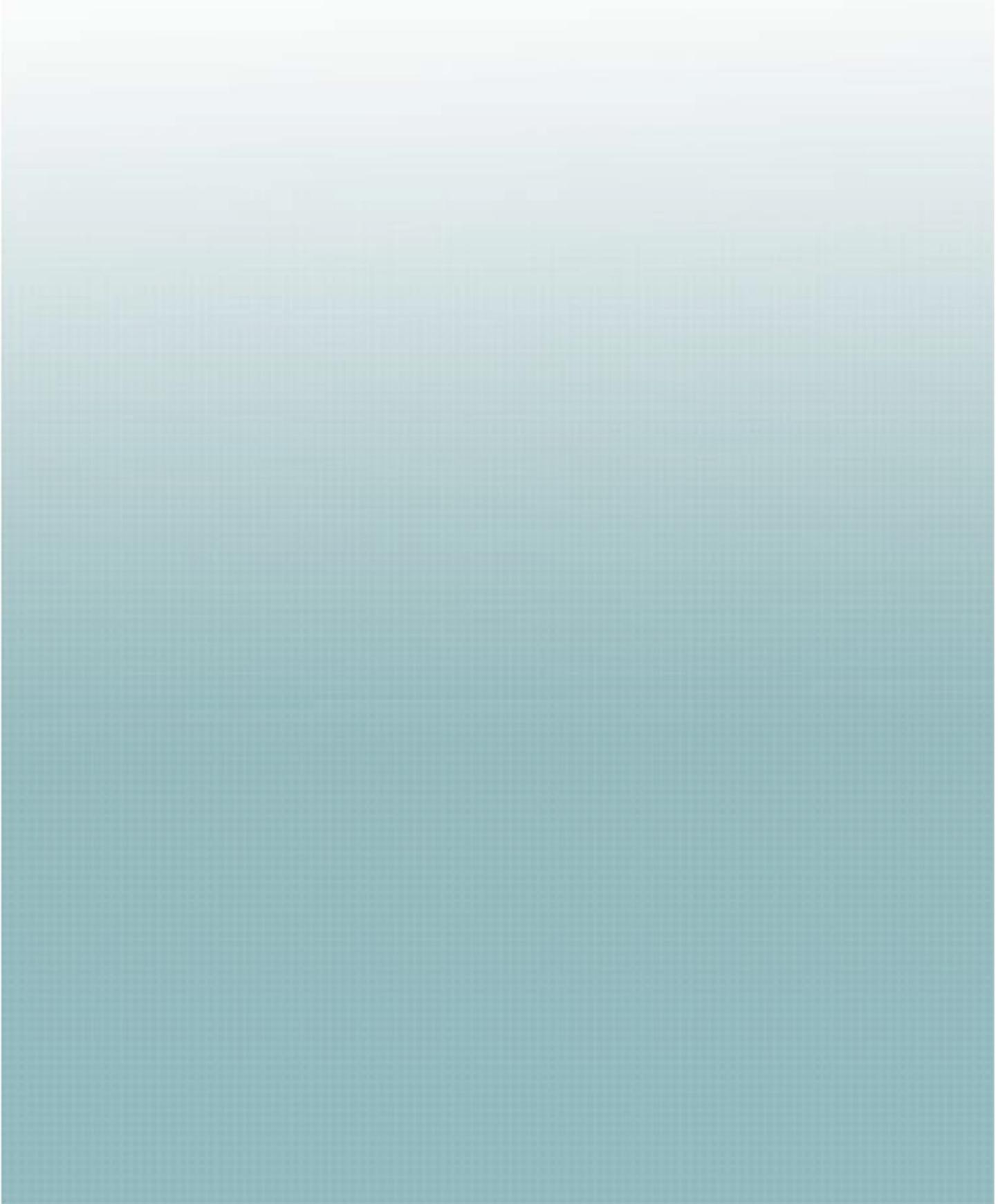
**Q:** *I would like to propose changes to SCED. Whom do I contact?*

**A:** Recommendations for SCED updates can be submitted through the Forum website at <http://nces.ed.gov/forum>. If you are working with an LEA or school in a state that has implemented SCED as a statewide system, you may wish to contact your state Department of Education with suggestions. SEAs that have implemented SCED often have systems in place for adding SCED Course Codes at the state level.

## Appendix B. Course Subject Area Codes in SCED Version 2.0

Course Subject Areas and Codes in SCED	
Course Subject Area	Code for Courses
English Language and Literature	01
Mathematics	02
Life and Physical Sciences	03
Social Sciences and History	04
Visual and Performing Arts	05
Foreign Language and Literature	06
Religious Education and Theology	07
Physical, Health, and Safety Education	08
Military Science	09
Information Technology	10
Communication and Audio/Visual Technology	11
Business and Marketing	12
Manufacturing	13
Health Care Sciences	14
Public, Protective, and Government Services	15
Hospitality and Tourism	16
Architecture and Construction	17
Agriculture, Food, and Natural Resources	18
Human Services	19
Transportation, Distribution, and Logistics	20
Engineering and Technology	21
Miscellaneous	22
Non-Subject-Specific	23 <sup>4</sup>

<sup>4</sup> No code for Non-Subject-Specific Subject Area is used at the Secondary level.



## Appendix C. Changes Implemented in SCED Version 2.0

This appendix provides information specific to SCED Version 2.0. It is intended as a pull-out section that can be used with the SCED Version 2.0 spreadsheet.

### **SCED Version 2.0 Changes:**

Notable changes implemented in SCED Version 2.0 include

- new and updated course codes, titles, and descriptions in Course Subject Area 5: Fine and Performing Arts, renamed to Visual and Performing Arts;
- new and updated course codes, titles, and descriptions for Career and Technical Education (CTE) courses in multiple Course Subject Areas;
- new and updated Advanced Placement (AP) courses in multiple Course Subject Areas;
- new course attributes that are not part of the SCED Framework, but can be used to provide expanded course information; and
- new Course Subject Area codes for prior-to-secondary courses that match secondary Course Subject Area codes.

### **SCED Version 2.0 Course Updates:**

- *Advanced Placement Course Codes*: based on course descriptions published by the College Board.
- *Visual and Performing Arts Course Codes*: informed by recommendations from the State Education Agency Directors of Arts Education (SEADAE).
- *Career and Technical Education Course Codes*: informed by a coalition of experts led by members of the Association for Career and Technical Education (ACTE), the National Association of State Directors of Career and Technical Education Consortium (NASDCTEc), and the U.S. Department of Education Office of Career, Technical, and Adult Education (OCTAE). Family and Consumer Sciences (FCS) representatives, led by the National Coalition for Family and Consumer Sciences Education (NCFACSE), also contributed to CTE recommendations.
- *Exploring Computer Science and Computer Science Principles Course Codes*: based on course descriptions developed by the National Science Foundation.

### **SCED Version 2.0 Course Subject Areas:**

Beginning with SCED Version 2.0, secondary and prior-to-secondary courses use the same two-digit Course Subject Area codes. Previously, prior-to-secondary courses were indicated using a separate set of Course Subject Area codes.

Prior-to-secondary courses can be indicated using either the SCED Element Grade Span, which is part of the 12-character SCED Identifier, or the attribute Course Applicable Education Level, which can be added to the SCED Identifier to provide more information.

- *SCED Grade Span*: The grade span for which the course is appropriate.
- *Course Applicable Education Level*: The education level, grade level, or primary instructional level at which a course is intended.

### **SCED Version 2.0 Change Codes:**

The SCED Version 2.0 downloadable spreadsheet includes six possible change status options for each SCED Course Code:

- No change
- Substantive update
- Editorial update
- New course
- New course merged from prior-to-secondary
- Archived course

## **Appendix D. Course Taxonomy Resources**

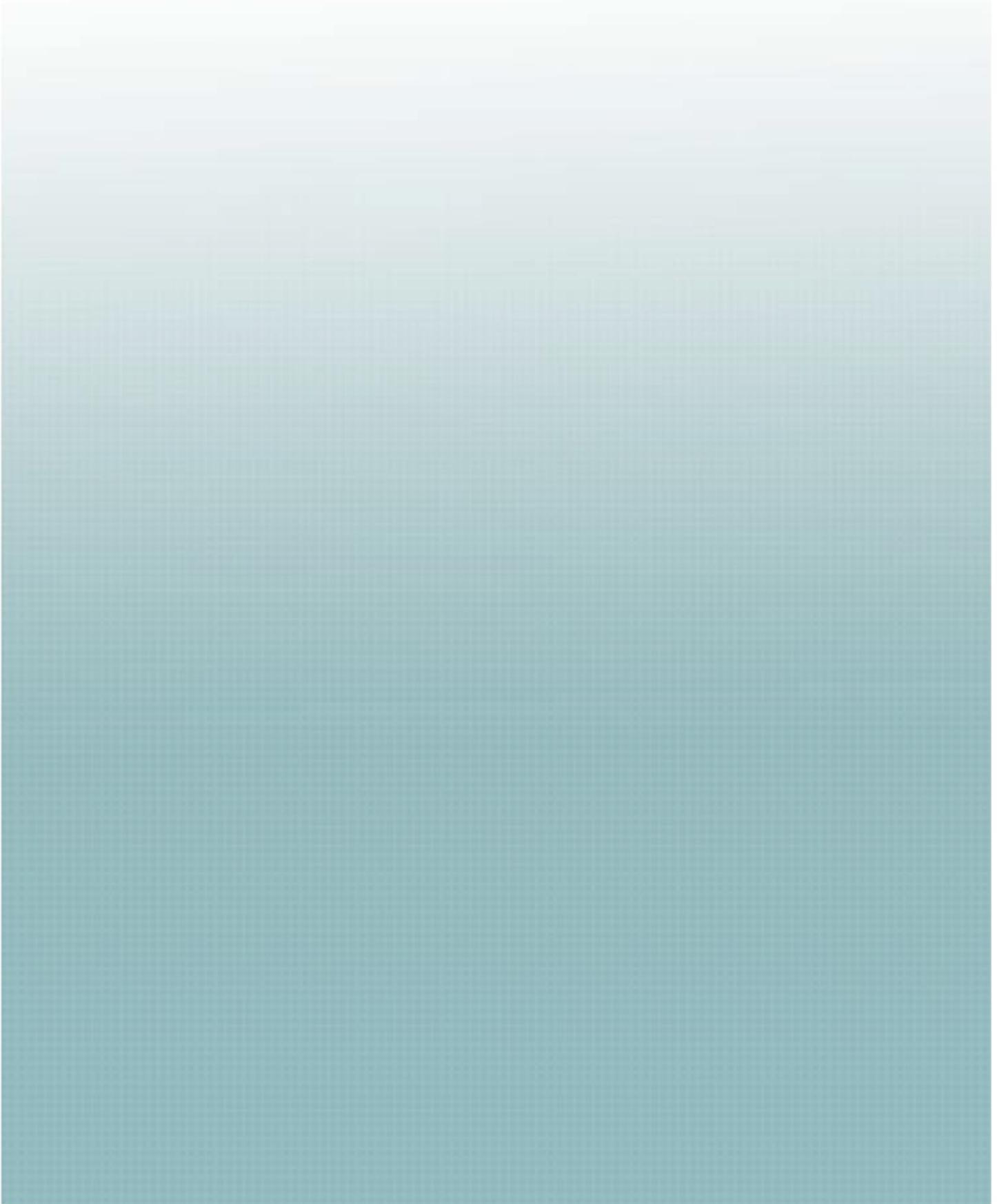
SCED is one of several NCES course code taxonomies currently in use.

### **Classification of Secondary School Courses (CSSC)**

This secondary course taxonomy provides a general inventory of courses taught nationwide at the secondary school level (grades 9 through 12). It is the basis for NCES High School Transcript Studies, which are conducted as part of the National Assessment of Educational Progress (NAEP). In an effort to use a single standard course code system at NCES, CSSC codes are being integrated into SCED. Additional information on CSSC codes and their use is available at <http://nces.ed.gov/surveys/hst/courses.asp>.

### **Classification of Instructional Programs (CIP)**

The CIP taxonomy of instructional programs supports the accurate tracking, assessment, and reporting of fields of study and program completion activity. CIP titles and programs descriptions are primarily used at the postsecondary level, and CIP is used by NCES in the Integrated Postsecondary Education Data System (IPEDS). Additional information on the history and use of CIP is available at [http://nces.ed.gov/ipeds/cipcode/Files/Introduction\\_CIP2010.pdf](http://nces.ed.gov/ipeds/cipcode/Files/Introduction_CIP2010.pdf).



## Appendix E. Related Resources

### Forum Guide to Supporting Data Access for Researchers: A Local Education Agency Perspective (2014)

[http://nces.ed.gov/forum/pub\\_2014801.asp](http://nces.ed.gov/forum/pub_2014801.asp)

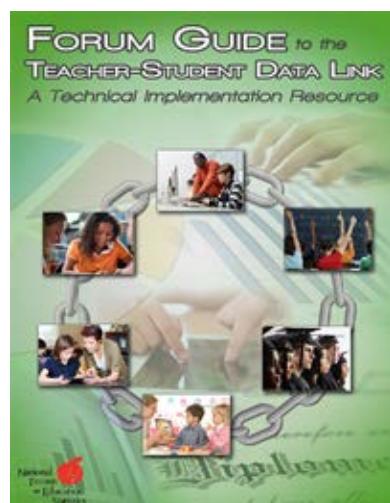
This guide is intended to help local education agencies (LEAs) field, support, and monitor research requests for access to data on staff and students. At its foundation is a focus on the unique needs of LEAs, including the fact that they receive requests from researchers for both existing data (data already collected by the LEA) and new data (data to be collected by researchers through direct interaction with students, staff, or records systems). The guide presents a series of core practices, operations, and templates that can be adopted and adapted by LEAs as they consider how to respond to these requests for education data.



### Forum Guide to the Teacher-Student Data Link: A Technical Implementation Resource (2013)

[http://nces.ed.gov/forum/pub\\_2013802.asp](http://nces.ed.gov/forum/pub_2013802.asp)

This resource provides a practical guide for implementing a teacher-student data link (TSDL) that supports a range of uses at the local, regional, and state levels. The guide addresses the considerations for linking teacher and student data from multiple perspectives, including governance, policies, data components, business rules, system requirements, and practices. It provides references to promising practices for high quality data linkages, including TSDL-specific processes such as roster verification and the establishment of the Teacher of Record.

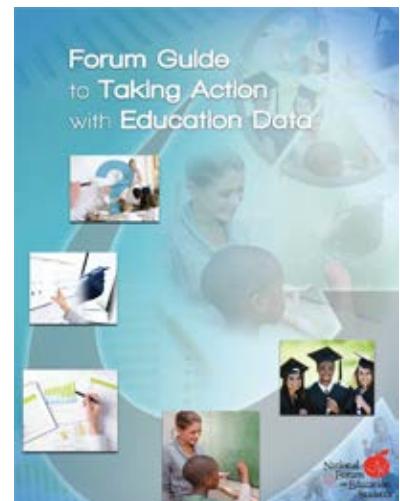


## **Forum Guide to Taking Action with Education Data (2013)**

[http://nces.ed.gov/forum/pub\\_2013801.asp](http://nces.ed.gov/forum/pub_2013801.asp)

This guide provides stakeholders with practical information about the knowledge, skills, and abilities needed to more effectively access, interpret, and use education data to inform action. The document includes an overview of the evolving nature of data use, basic data use concepts, and a list of skills necessary for effectively using data. The Guide recommends a question-driven approach to data use, in which the following questions can help guide readers who need to use data to take action: What do I want to know? What data might be relevant? How will I access relevant data? What skills and tools do I need to analyze the data? What do the data tell me? What are my conclusions? What will I do?

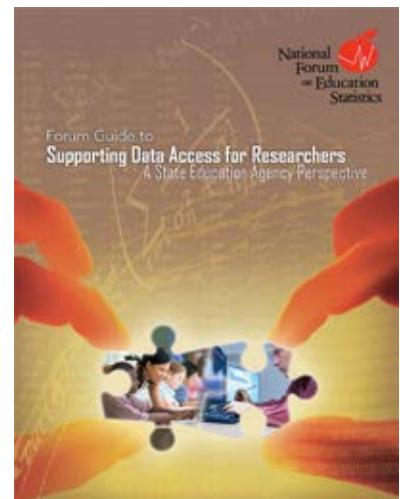
What effects did my actions have? What are my next steps? The Briefs that accompany the Introduction are written for three key education audiences: Educators, School and District Leaders, and State Program Staff.



## **Forum Guide to Supporting Data Access for Researchers: A State Education Agency Perspective (SEA) (2012)**

[http://nces.ed.gov/forum/pub\\_2012809.asp](http://nces.ed.gov/forum/pub_2012809.asp)

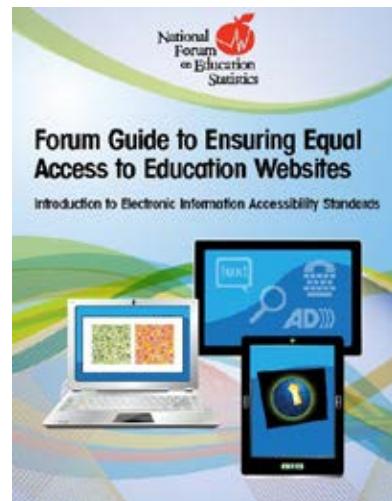
This guide recommends policies, practices, and templates that can be adopted and adapted by SEAs as they consider how to most effectively respond to requests for data about the education enterprise, including data maintained in longitudinal data systems. These recommendations reflect sound principles for managing the flow of data requests, establishing response priorities, monitoring appropriate use, protecting privacy, and ensuring that research efforts are beneficial to the education agency as well as the research community.



## **The Forum Guide to Ensuring Equal Access to Education Websites (2011)**

[http://nces.ed.gov/forum/pub\\_2011807.asp](http://nces.ed.gov/forum/pub_2011807.asp)

This guide is designed for use by information technology administrators, data specialists, and program staff responsible for the “content” in data reports, as well as education leaders (e.g., administrators who prioritize tasks for technical and data staff), and other stakeholders who have an interest in seeing that our schools, school districts, and state education agencies operate in an effective and equitable manner for all constituents, regardless of disability status. It is intended to raise awareness in nontechnical audiences and suggest best practices for complying with Section 508 goals at an operational level in schools, school districts, and state education agencies. It is not intended to recreate technical resources that already exist to facilitate Section 508 compliance.



## **Traveling Through Time: The Forum Guide to Longitudinal Data Systems (Series)**

### **Book I: What is an LDS? (2010)**

[http://nces.ed.gov/forum/pub\\_2010805.asp](http://nces.ed.gov/forum/pub_2010805.asp)

### **Book II: Planning and Developing an LDS (2011)**

[http://nces.ed.gov/forum/pub\\_2011804.asp](http://nces.ed.gov/forum/pub_2011804.asp)

### **Book III: Effectively Managing LDS Data (2011)**

[http://nces.ed.gov/forum/pub\\_2011805.asp](http://nces.ed.gov/forum/pub_2011805.asp)

### **Book IV: Advanced LDS Usage (2011)**

[http://nces.ed.gov/forum/pub\\_2011802.asp](http://nces.ed.gov/forum/pub_2011802.asp)

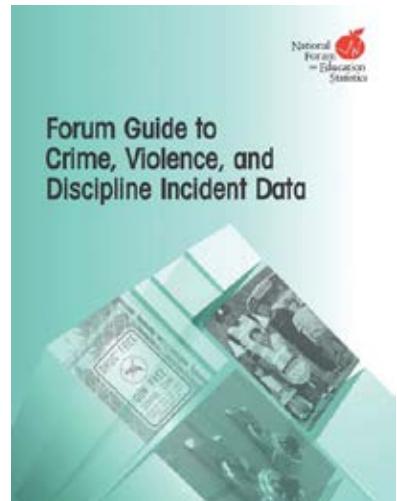


Longitudinal data systems (LDSs) are increasingly becoming the state of the art in education data. An LDS makes it possible to not only monitor the success of individual students, but also to identify trends in those students' education records. These systems provide powerful and timely insights about students and allow educators to tailor instruction to better meet individual needs. They can also reveal with great clarity the effects our policies, programs, and decisions have on schools. The *Traveling Through Time* series is intended to help state and local education agencies meet the many challenges involved in developing robust systems, populating them with quality data, and using this new information to improve the education system. The series introduces important topics, offers best practices, and directs the reader to additional resources related to LDS planning, development, management, and use.

## **Forum Guide to Crime, Violence, and Discipline Incident Data (2011)**

[http://nces.ed.gov/forum/pub\\_2011806.asp](http://nces.ed.gov/forum/pub_2011806.asp)

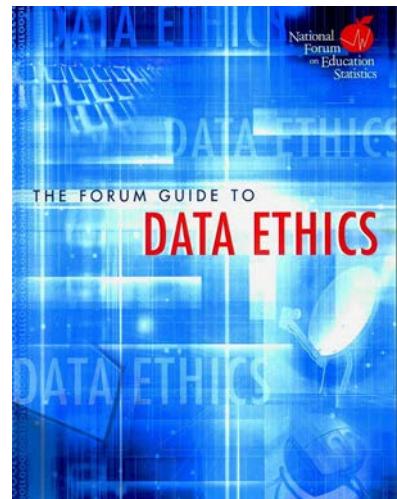
This document focuses on the use of crime, violence, and discipline data to improve school safety. It presents strategies for implementing an incident database, including system design, management, and training; recommends a body of data elements, definitions, and code lists useful for collecting accurate and comparable data about crime, violence, and discipline; and offers suggestions for the effective presentation and reporting of data. This guide was created in collaboration with the Discipline Data Working Group of the U.S. Department of Education to ensure that it will be useful to states and districts reporting data to the Office for Civil Rights, the Office of Safe and Drug Free Schools, the Office of Special Education and Rehabilitative Services, and *EDFacts*.



## The Forum Guide to Data Ethics (2010)

[http://nces.ed.gov/forum/pub\\_2010801.asp](http://nces.ed.gov/forum/pub_2010801.asp)

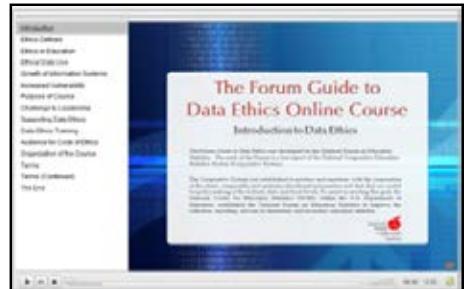
While laws set the legal parameters that govern data use, ethics establish fundamental principles of “right and wrong” that are critical to the appropriate management and use of education data in the technology age. This guide reflects the experience and judgment of seasoned data managers; while there is no mandate to follow these principles, the authors hope that the contents will prove a useful reference to others in their work.



# Forum Guide to Data Ethics Online Course

[http://nces.ed.gov/forum/dataethics\\_course.asp](http://nces.ed.gov/forum/dataethics_course.asp)

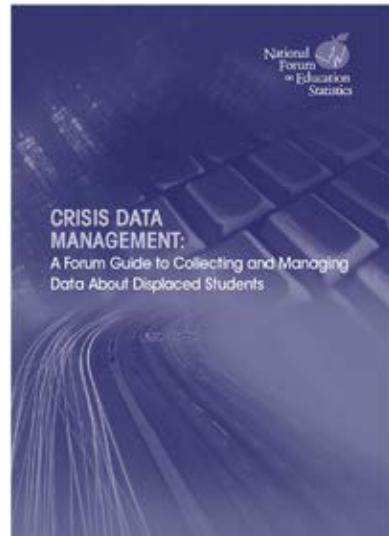
The Forum Guide to Data Ethics Online Course is based on the Forum Guide to Data Ethics and includes an online test. Individuals who pass receive a certificate.



## **Crisis Data Management: A Forum Guide to Collecting and Managing Data About Displaced Students (2010)**

[http://nces.ed.gov/forum/pub\\_2010804.asp](http://nces.ed.gov/forum/pub_2010804.asp)

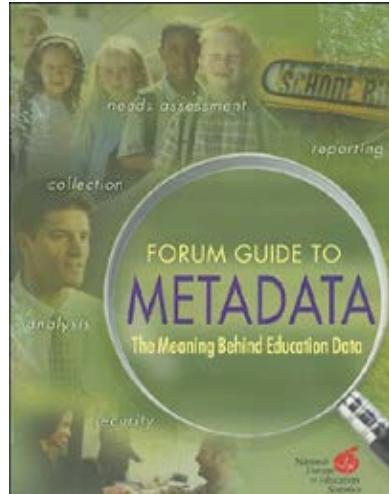
This document provides recommendations that can be used by elementary and secondary education agencies to establish policies and procedures for collecting and managing education data before, during, and after a crisis.



## **Forum Guide to Metadata: The Meaning Behind Education Data (2009)**

[http://nces.ed.gov/forum/pub\\_2009805.asp](http://nces.ed.gov/forum/pub_2009805.asp)

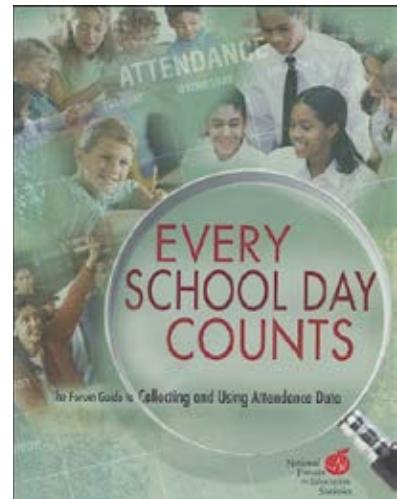
This document offers best practice concepts, definitions, implementation strategies, and templates/tools for an audience of data, technology, and program staff in state and local education agencies. It is hoped that this resource will improve this audience's awareness and understanding of metadata and, subsequently, the quality of the data in the systems they maintain.



## **Every School Day Counts: The Forum Guide to Collecting and Using Attendance Data (2009)**

[http://nces.ed.gov/forum/pub\\_2009804.asp](http://nces.ed.gov/forum/pub_2009804.asp)

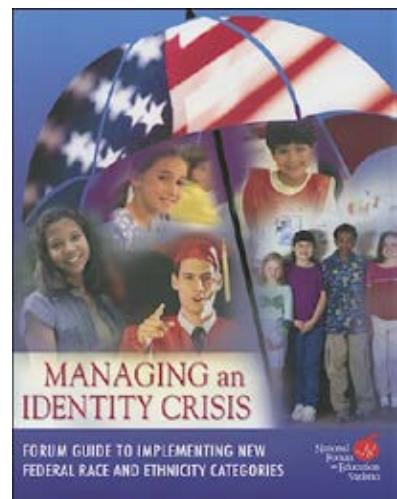
This document offers best practice suggestions on collecting and using student attendance data to improve performance. It includes a standard set of codes to make attendance data comparable across districts and states. The product also presents real-life examples of how attendance information has been used by school districts.



## **Managing an Identity Crisis: Forum Guide to Implementing New Federal Race and Ethnicity Categories (2008)**

[http://nces.ed.gov/forum/pub\\_2008802.asp](http://nces.ed.gov/forum/pub_2008802.asp)

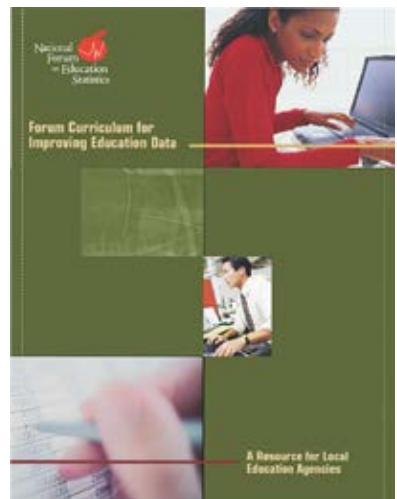
This best-practice guide is developed to assist state and local education agencies in their implementation of the new federal race and ethnicity categories—thereby reducing redundant efforts within and across states, improving data comparability, and minimizing reporting burden. It serves as a toolkit from which users may select and adopt strategies that will help them quickly begin the process of implementation in their agencies.



## **Forum Curriculum for Improving Education Data: A Resource for Local Education Agencies (2007)**

[http://nces.ed.gov/forum/pub\\_2007808.asp](http://nces.ed.gov/forum/pub_2007808.asp)

This curriculum supports efforts to improve the quality of education data by serving as training materials for K12 school and district staff.



## **Improving Education Data Online Course**

<http://nces.ed.gov/forum/dataqualitycourse/dataquality.asp>

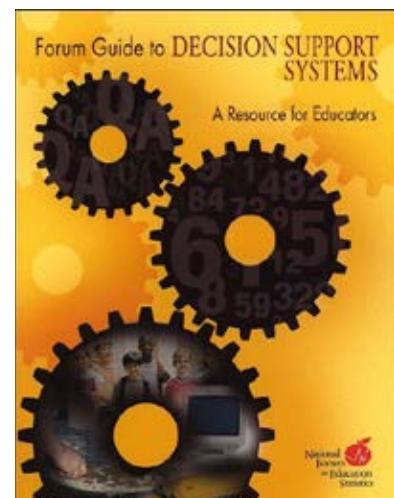
The Improving Education Data Online Course is based on topics addressed in the Forum Curriculum for Improving Education Data: A Resource for Local Education Agencies. The course is offered in two parts: Part 1 – Creating a Foundation introduces users to the concept of quality data, assists users in assessing school or district data quality issues, introduces the concept of classifying education data, and touches on laws governing data security and confidentiality. Part 2 – Coordinating Quality Data covers the roles and responsibilities of the data steward, discusses data flow and cycles and how they affect high-quality data, examines how data entry errors can affect quality data, introduces the concepts of a data dictionary, a data calendar, and a data audit. Finally, it suggests communications strategies that LEA staff should consider to improve data quality.



## **Forum Guide to Decision Support Systems: A Resource for Educators (2006)**

[http://nces.ed.gov/forum/pub\\_2006807.asp](http://nces.ed.gov/forum/pub_2006807.asp)

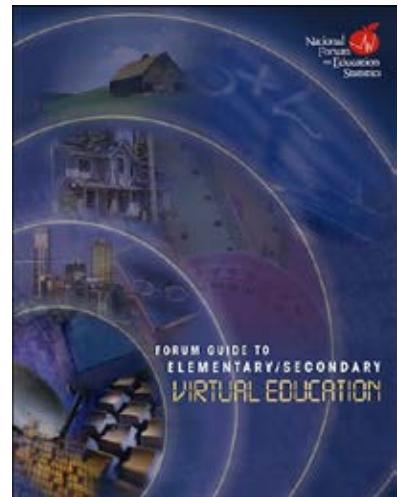
This document was developed to remedy the lack of reliable, objective information available to the education community about decision support systems. It is intended to help readers better understand what decision support systems are, how they are configured, how they operate, and how they might be developed and implemented in an education setting.



## **Forum Guide to Elementary/Secondary Virtual Education (2006)**

[http://nces.ed.gov/forum/pub\\_2006803.asp](http://nces.ed.gov/forum/pub_2006803.asp)

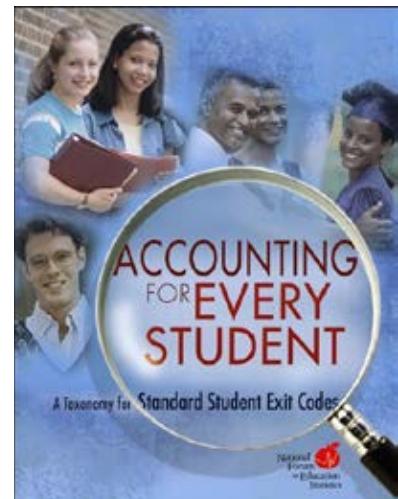
This guide provides recommendations for collecting accurate, comparable, and useful data about virtual education in an elementary/secondary education setting.



## **Accounting for Every Student: A Taxonomy for Standard Student Exit Codes (2006)**

[http://nces.ed.gov/forum/pub\\_2006804.asp](http://nces.ed.gov/forum/pub_2006804.asp)

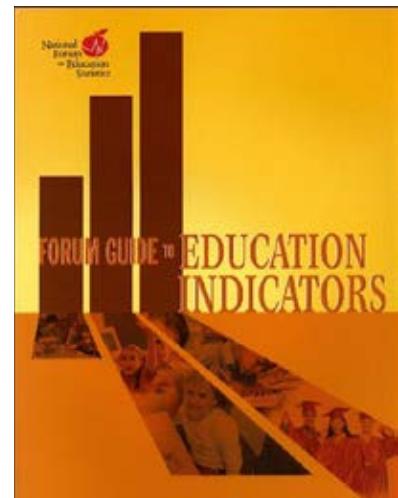
This guide presents an exhaustive and mutually exclusive exit code taxonomy that accounts, at any single point in time, for all students enrolled (or previously enrolled) in a particular school or district. It is based on exit code systems in use in state education agencies across the nation and a thorough review of existing literature on the subject.



## **Forum Guide to Education Indicators (2005)**

[http://nces.ed.gov/forum/pub\\_2005802.asp](http://nces.ed.gov/forum/pub_2005802.asp)

This guide provides encyclopedia-type entries for 44 commonly used education indicators. Each indicator entry contains a definition, recommended uses, usage caveats and cautions, related policy questions, data element components, a formula, commonly reported subgroups, and display suggestions. The document will help readers better understand how to appropriately develop, apply, and interpret commonly used education indicators.



# **Forum Unified Education Technology Suite**

[http://nces.ed.gov/forum/pub\\_tech\\_suite.asp](http://nces.ed.gov/forum/pub_tech_suite.asp)

The Forum Unified Education Technology Suite presents a practical, comprehensive, and tested approach to assessing, acquiring, instituting, managing, securing, and using technology in education settings. It will also help individuals who lack extensive experience with technology to develop a better understanding of the terminology, concepts, and fundamental issues influencing technology acquisition and implementation decisions.

## **Forum Guide to Building a Culture of Quality Data: A School and District Resource (2005)**

[http://nces.ed.gov/forum/pub\\_2005801.asp](http://nces.ed.gov/forum/pub_2005801.asp)

This guide was developed by the Forum’s Data Quality Task Force to help schools and school districts improve the quality of data they collect and to provide processes for developing a “Culture of Quality Data” by focusing on data entry—getting things right at the source. The quality of data will improve when all staff understand how the data will be used and how data become information. This guide will show how quality data can be achieved in a school or district through the collaborative efforts of all staff.



## Common Education Data Standards (CEDS)

<https://ceds.ed.gov/>

The Common Education Data Standards (CEDS) project is a national collaborative effort to develop voluntary, common data standards for a key set of education data elements to streamline the exchange, comparison, and understanding of data within and across P-20 institutions and sectors. This common vocabulary enables more consistent and comparable data to be used throughout all education levels and sectors necessary to support improved student achievement. CEDS is a voluntary effort that increases data interoperability, portability, and comparability across states, districts, and higher education organizations.







